

AVIATION WEEK

A McGRAW-HILL PUBLICATION

FEB. 12, 1951

\$6.00
A YEAR

The tail-less plane has a tail!

That is, it has all of a tail's good dynamic qualities, without as much "drag" as is inherent in an actual tail.

In the Northrop Flying Wing, these qualities are provided *electronically*—by a system that makes the wingtip rudders perform directional and stabilizing functions.

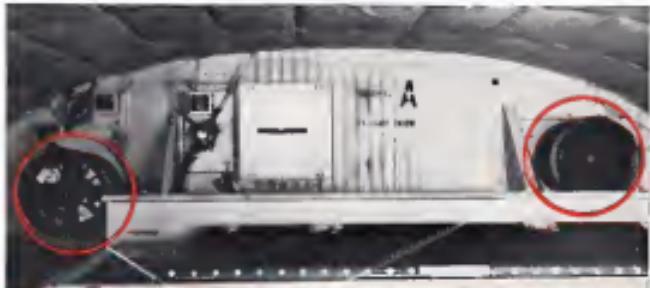
It's all a question of *automatic control*. So Northrop chose a Honeywell Autopilot with the Honeywell rate gyro as the sensing part of the system; had us adapt them to the Flying Wing.

We do many special jobs like this. We'll be doing them for many years to come—because *automatic control* is such an all-important part of aviation progress. And *automatic control* is Honeywell's business.

Minneapolis-Honeywell, Minneapolis 8, Minn.

Honeywell
MINNEAPOLIS
Aeronautical Controls





JOY AXIVANE AIRCRAFT FANS ELIMINATE DANGEROUS FUMES

The Douglas C-124 Globemaster II, designed and manufactured by the Douglas Aircraft Company, Inc., Long Beach, California, is designed to permit attacks to be driven directly into the cargo compartment for loading or unloading. Explosive gases from gasoline or Diesel-driven trucks would present a hazard to the loading crew. Two Joy AXIVANE Aircraft Fans are therefore installed in the forward cargo-compartment bulkhead. These fans move a stream of outside air into the cabin, thereby loading oxygen, to prevent the accumulation of explosive or toxic vapors. When the plane is transporting troops, these fans provide ventilating air prior to take-off.

Each of these highly-efficient 6 H.P. blowers produces 1280 C.F.M. at 24" static pressure, yet weighs only 15.5 pounds and is only 9" in diameter. Dovetail advantages found in all Joy Aircraft Fans are compact design, shock-resistant strength, maximum operating noise, and the most favorable air volume-to-weight and electric-to-power ratios.

Joy designs and builds each fan to the exact requirements for which it is intended. Each fan, therefore, is custom engineered for highest efficiency. For many purposes such fans can be supplied from the extensive line already designed. Both single and multi-bladed types are available. Other features include straight or fixed blades, balanced for quiet operation, radial static-blades, noncorrosion, and coolant motors where required.

Here are some of the many uses for Joy AXIVANE Aircraft Fans: Windshield de-frosting, windshield or wing de-icing, cabin heating, cabin ventilation, cockpit heating, sealing radio and electronic equipment, sealing voltage regulators, oil cooling, gear-box cooling, instrument cooling, air reconditioning, and high-altitude pressurizer heating.

Write for Bulletin, or
Consult a Joy Engineer

100 Years of Engineering Leadership

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH 25, PA.
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B.F. Goodrich



60-inch bag holds 12-man boat, unzips itself in seconds

THE COAST GUARD and B.F. Goodrich have solved a difficult rubber raft problem. An inflatable boat that scores medium 25 men—12 in the bows, 13 alongside—can be rolled onto a compact bundle, only 50 inches long.

Trouble was that the boat was being shipped with sea water and oil, and a storage case that could be spread easily an emergency wouldn't seal out these elements. The solution of the case had heard of the B.F. Goodrich pressure sealing zipper, thought straight

be the answer. It was, as far as sealing the case was concerned.

In addition, B.F. Goodrich engineers have developed a seal for the end of the zipper and a lock that can be opened instantly. A half case and a pack, not only does the upper section, but a cushion discus handle inside the case is released, providing the pressure that opens the case.

The storage case problem has been solved with a seal that retains its dependability after long storage. Provides a

water tight and, in the amateur and And speeds up the launching and refitting job. In fact, the whole launching operation can be handled by one man. If you have a problem that doesn't fit in with our regular angle solve, B.F. Goodrich engineers may already have the answer. Check with The B.F. Goodrich Company, Aerostatic Division, Akron, Ohio.

B.F. Goodrich
FIRST IN RUBBER



SIDELIGHTS

People

John G. Leslie, vp of Pan American, writes he is making "wonderful progress" in his battle with polio. He attended the PAA board meeting Jan. 9 and has been going to his office since a week ago. Arthur W. D. Shantz, Canadian Minister of Transport, and former president of American Can, joined in New York City. E. Ward Baldwin, ex-CIAA and now in Denver, is sending postcards to friends urging nomination of Eddie Rickenbacker as the candidate Democratic-Negligible candidate for President. Captain Eddie reiterates never having been in a USAF uniforms officer.

From Roundabout

Columbia Aviation Corporation moves to Huron, S. Dak., Oklahoma City, Miss. Airline
The Texaco Headquarters, N.Y., reports, passengers again fill all available seating in the CAA-wanted 100-man jet national aviation pilot at Atlanta. Closed negotiations are under way for Sun-McCormick, previously held independent, to merge setting up a consolidated airline to operate all international routes. Watch for some premium to eliminate small cities from break last month because of the Ernst & Ernst report to Senate Select Committee on Small Business. Gen. George Shultz, chairman, Joint Chiefs of Staff, is still taking a whipping from Congressmen for failing to settle against former Defense Secretary Johnson's checkbook in Naval aviation.

New Craft

The new experimental agricultural sprayer plane of First Works from Texas A&M College, will be shown at 3rd Annual National Agricultural Aviation Conference at Memphis Feb. 18-20. The aircraft, a single-cowl built and flown at Ponca City, recently, was engineered by five Texas engineers of Agricultural Products, Inc., a Division firm which originated the first aircraft crop duster. The new A&M-McCormick Research, Inc.'s has a 115-hp Lycoming on gear, ends with \$17,000 for development, and leaders contend that with volume production unit cost might drop to the \$1000-\$1200 range.

Industry

Aeronautical Standards Group of the Marine Board is changing designation of Army Navy aircraft standards from AN to MIL. The group is also changing the U.S. Army-Navy Standard Manual which are principally the standards may now be designated MIL. Canada has plans of expansion for more Chantair-Lawn solar Orlac cloth sheeting the off-the-shelf purchase by foreign buyers. The company is one of the trend in conversion steps. Part of its latest interest is found in aircraft that have rugged transports might be taken by sailplane as a way also, possibilities look good for tailoring conversions in sheet and sailplane basic Chantair beliefs.

action on the local limit switches

Operating on 16 volts DC, the ROTOmetre is available in two models, one of which can incorporate either a position-indicating potentiometer or an intermediate position switch. Both models are qualified for compliance to Specifications AN-M-90 (Master and Slave, including Filter), USAF-4946 (Requirements for complete actuator), and USAF-F-4151 (General Electro-Mechanical Actuator Specification).

Write for Bulletin 112



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VISITING BRITAIN—One of four North American FJ-2 Fury fighters that it was possible to obtain in Britain. Note large (1300-gal) multi-fuelled top tanks. The planes have flight refueling gear at the nose. They were accompanied by four K-19 tankers.



VISITING HAWAII—This photo, taken during visit of Douglas C-119 Globemaster II to Hickam AFB, affords a good comparison with the Douglas C-74 Globemaster in aircraft preference. The Globemaster II made the flight from Taichung AFB, China, in ten hours.

Military Aviation Picture Highlights

T-33 TROPS—A formation of North American T-33 trainers from Vance AFB, Okla., precision fly by. Vance is the first base to replace the T-33 completely with T-38s.



SKYRAIDER NEST—Birds' nest of AD-4 Douglas-El Segundo plant.





IN THE NEWS
NEW POWER
NEW RESEARCH
NEW RECORD

J47-17 (inset engine) (upper), one of new engines now in production at G-E's type. Mass plant, features integrated electronic fuel and jet nozzle system for completely automatic control of engine and afterburner. New fuel system is designed for operation at 30,000 feet, opposite polarity ignition allows start at that altitude.

Designed to suit your specific needs, turboprop, turboprop and turbojet/turboprop engines are available at General Electric. This complete line of aircraft gas turbines is backed by fifty-five years of experience. Specialists in every phase of aircraft gas turbine work assure you



Water-cooled perhaps. Jet-GE engineers look directly into hot exhaust gases in jet tail pipes. Study of these burning gases is involved in the improvement of aircraft gas turbines. Research tools such as this are constantly being developed at G-E to give you better power.

AIRCRAFT GAS TURBINES

GENERAL  **ELECTRIC**



World endurance record was set at Selfridge AFB by this North American F-86 powered by G-E J47. Plane landed every two hours for refueling but was operated continuously for 33½ hours. Circles or wings is representative of widespread G-E service organization.

WHO'S WHERE

In the Front Office

G. E. Hughes, Jr., vice-president, manager of Lockheed Aircraft Division, has been advanced to president as president of Aerospace and Astro, as well as chairman of the board of the subunit. Dr. J. Hopkins, former president, has become executive general manager. Mr. Lockheed's recently acquired Miles Co. has been merged into Aerospace. Mr. George L. Schaeffer, former manager of Aerospace and Astro at Ralph Ochsner, formerly sales and advertising manager.

B. B. Newell, general manager of the Allis-Chalmers, Chicago, division, has been promoted to president of the company. He will also be responsible for the overall management of operations of the division, a score in line with delicate production expansion. Numerous responsibilities have been given, subject to Newell's full approval, to assist him in his new position. These include: W. D. Gaskins, director of personnel; C. H. Koenig, director of research and development; R. E. Hirsch, director of engineering; R. E. Cole, chief technical and systems manager; and J. C. Cunningham, mid-management, continue in these areas.

Regardless of whether Fairchild or Kaman-Fairchild makes the C-119C Pakets, they will all be called Fairchild Pakets, the USAF has advised both companies.

The Fairchild C-119C Pakets on order for the Marines will probably be powered by Wright R-3350 compressor engines built under license by Hudson Motor Car Co. under Navy sponsorship.

What They're Doing

Brian E. English, public relations manager of the Aerospace Industries Area, has left his post to assist in setting up a short range analog system for the Fox-80 Air Force Experimental aircraft. He will remain with the project until early next year to direct its present work.

C. L. (Chet) Jones, who helped pioneer the program of the Airport Operations Council and has been chairman of ADC's national security liaison committee for the past two years, has resigned as Denver's director of airports to give full attention to his personal business interests.

Changes

H. M. Latos has been named assistant general manager of Fairchild Engine division, and Alfred T. George has become head of all the aerospace division. Paul M. Rausch has been named to take charge of aircraft engine design. C. W. Clark has been appointed manager of labor relations for the private Aviation Club.

Dick T. Goss has been named as manager, business manager at Lockheed, Murray City, Okla. Other newly appointed civilian division managers are Ronald Keeler for basic cycle motor vehicle manager and S. H. Noller in the small engines. Other appointments are: Morris Olson, engineering agent; L. A. Marsteller, selected vehicles manager; W. E. McDaniel, selected aircraft manager; D. Brown, aircraft manager; G. P. Thomas, service manager; Lewis Anderson; and F. A. Whipple, chief manufacturing engineer.

Henry G. Trotter has been named first test and maintenance manager of the aircraft division, with W. A. Goldbeck, incoming head as assistant manager of test and maintenance testing at the Seattle Plant.

AVIATION WEEK, February 11, 1968

INDUSTRY OBSERVER

Both the North American F-93A prototype fighter prototypes are being turned over by the USAF to the NASA Flight Test Laboratory at Edwards AFB, Marine Corps, for high-speed flight research, indicating that the aircraft shows excellent performance, as not going into production. The F-93A is the first version of the North American F-94, a two-seat, two-seat fighter version of the North American F-86, is heavier and closer to 9000 lb. with afterburner. The aircraft will give NASA a chance to get some firsthand flight data on some of its later ideas about future air combat, which are incorporated in the F-93 design.

New USAF attack/cargo tactical troop carrier is being developed by Stanley Aviation Corp., Buffalo, with first experimental model expected to be ready for AMC trials in three to four months. Contractor is lowered by two 10-ft. diameter charters. It will carry 12 fully equipped ground troops or 6000 lb. of cargo. Four air bags under the floor are inflated when aircraft is released from plane and cushion the landing shock. Cabin area is designed for use with Fairchild C-119 combat transport. Dimensions are 8 by 8 by 5 ft. 10 in.

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Douglas Helicopters has transferred the CH-47 cargo helicopter built by Douglas to the USAF helicopter test committee at the Wright-Wright organization following completion of flight trials conducted for Navy Douglas is back at an even interrupted project of developing seven-place Bellanca helicopter of different design. The entire competition was won by the Fairchild H-33.

Fairchild trouble at the Allison Turbolent in its first test bay at San Diego was traced to a relatively minor silicon-conductor shorting of the blades. Discovery followed an elaborate troubleshooting overhaul of the two Allison T-38 turboshaft engines and the Aeroproducts propellers. Plans are expected to fly in Indianapolis in soon as it makes a few last ditch flights at San Diego.

A group of 14 Fairchild technical and production experts headed by Fairchild Vice President Fred J. Fissell has paid off first visit to Kraus-Flumer's Wilkes-Barre plant, starting to put into operation the assistance agreement between the two companies for building the C-119C Pakets. Project permit said that the meeting was "unofficial" by nationality and indicated that both companies were ready to "buy the hatchet and get the job done." Five Wilkes-Barre Pakets, assembled from parts supplied by Fairchild as part of the production training program, is expected to be the first.

Scandinavian Airlines System has put its first Lockheed-built twin-engine Scavia aircraft into service on the Oslo-Goteborg-Copenhagen run, and has taken delivery on two more Scavia. Delivery of three more Scavia to SAS that spring will complete the initial of six planes ordered.

Orbital missiles are now being qualified and tested at Volanite, near Gothenburg, Sweden. Canada's Canadian Defense Research Board has disclosed a new Canadian National Aeronautical Research Establishment is being opened at Ufaids Airport, Ottawa. Details of the types and performance of the missiles have not been announced.

First of Avco Lycoming's ten pre-production CF-100 twin jet fighters fitted with Westinghouse-built Canadair jet engines will soon be completed and ready for flight. First two experimental CF-100 planes now flying are powered with Rolls-Royce Avon turbines.

Washington Roundup

20 Years of Militarism?

The President's recent declaration of a national "emergency" was really a bugle call to announce a new long-term era of militarism, to condition the public to a long and bitter burden of heavy defense spending—probably \$60 billion more for defense, with a levelized rate of around \$10 billion following the emergency.

A budget of 1982 has not confirmed a set. Then, too, it probably is odd to agree to the renewal of an indefinite period of armed preparedness. Actually, most military leaders don't anticipate a longer war by 1982. Some do. But, there's no show of hands to name the official deadlines. The "emergency" program probably won't get underway before May or June. Washington's intent is clearly planning for the long range and need to meet a crisis.

Gen. Dwight Eisenhower's report to Congress called the situation: "We have to devise a scheme that we can support over the next 20 years, 30 years, whatever may be the time necessary—in long as the threat, the measured threat of aggression, remains in the world."

Manpower Battle

Behind the scenes, Defense Undersecretary Director Charles E. Wilson and Labor Secretary Maurice Tobin are trying for control over manpower.

Wilson wants a big policy agency to coordinate civilian and military requirements set up at DOD, under Gen. Leaven Clay. Tobin wants it as his department. It's up for decision by the President.

With paraded Tobin, Wilson would get first consideration. He could be counted on to go slow in drafting labor force cuts in essential industries, to throw his weight against plant closings, decimating employment. With Wilson, production would come first.

NSRB Strip-Down

National Security Resources Board lost its long-range planning functions last week. The President set up a five-member Materials Policy Commission, under the chairmanship of Columbia Broadcasting System's president, William Paley, to take them over. NSRB has already been stripped of its share-taking planning function by Charles Wilson's Office of Defense Mobilization.

The only function left for NSRB's chairman, former Secretary for Air Stuart Symington, seems to be his statutory assignment: *Adviser to the President*.

Buck to Life

• Prototype development, Strategy for Air Threats. First letter from USAF to go ahead with development of advanced cargo and jet aircraft adaptable to military and civilian uses. It has. Undersecretary John McConaughay's enthusiastic support, they start. Buck was member of the President's 1975 Air Policy Commission that urged government financing of new commercial craft to surpass U.S. leadership in commercial aviation and a resounding call for military use in an emergency. They'll

have to convert some military birds who are staying to digest how and materials from our plane development. USAF's Senior Officers Board recently rated out a cargo plane designed for MATS operation from its research and development program.

• CAA statement. Air Force is pressuring Bureau of the Budget to clear legislation which would bring mandatory deregulation of air transportation. It has been sleeping there for almost a year. CAA, under former Administrator Edith Renfro, backed the plan. October issue of *CIAA*, under Administrator Donald Nygren, with the approval of Commerce Department, will again oppose it.

New Renegotiation Law

New law would set up an independent five-member Presidentially appointed Renegotiation Board. Expect it on the books this week.

The measure explicitly subjects all Commerce Department contracts, for the first time, to renegotiation. This won't affect airport contracts, though. CAA merely seeks grants to states and cities—which the agency largely controls.

It generally expands renegotiation coverage to all contracts "from the time of award." This would not include contracts let by National Advisory Committee for Aeronautics, for the first time will also be subject to renegotiation for excess profits.

The Renegotiation Board, if it chooses, may let the service renegotiate their own contracts within the policies it lays down.

Congressional Committees

• Rep. Carl Vinson's House Armed Services Committee has been authorized to investigate the defense program, will probably be given \$100,000 in the main fund to start off with. It will go into war profiteering, a Vinson committee. World War II hearings before the old Naval Affairs Committee which Vinson recently headed led to enactment of the Rationing Act.

• Sen. John J. Williams, Wisconsin Democrat, has introduced a bill to require civilian crews at USAF training bases, mostly in regard to aircraft which aren't moved into centers with inadequate housing and training facilities. Research spot they are. USAF has already undertaken corrective steps at Lockheed, Tex., and other bases.

• Sen. Joseph O'Mahoney, new chairman of the Senate Appropriations Subcommittee on the Armed Services, is a staunch proponent of air and space power. He replaces Oklahoma's earlier Elmer Thomas who fought for Louis Johnson's reform in USAF and Navy power. Before World War II, O'Mahoney headed the Administration and the War Department in the 1930s, periods when reorganized the Air Corps and the Department of Defense by leading the Senate drive for a 75 group USAF.

• Sen. Harry Kilgore, new chairman of the Appropriations Subcommittee on Post Office Department, well-dressed, detailed facts and figures on mail to International air carriers—particularly Pan American. He's been critical of alleged FAA and American Airlines private tactics.

AVIATION WEEK

Helicopters Will Star in Show and Study

April date selected for demonstrations on Mall in Capital.

By Alexander McHugh

Two major moves toward to one-silence starting going in public acceptance made by the helicopter in the last year were staged in Washington last week by the U.S. military services in cooperation with the helicopter industry, and by the Air Coordinating Committee.

The two correlated but substantially launched programs are:

• A静止模特儿 exhibition show, Apr. 29-30

in Washington, D. C., with eight and state demonstration of more than 30 different types of helicopters.

• A government helicopter study to determine effects of current military helicopter developments on tomorrow's commercial helicopter, which will probably have a long-sustained effect on helicopter progress after its completion.

The exhibition show, planned to coincide with the anniversary of the annual meeting of the American Helicopter Society at the Hotel Washington, Apr. 26, 27 and 28, will give helicopter manufacturers, for the first time, a chance to put on a fieldside demonstration of the unique capabilities of the helicopter to commercial and military users.

Cooperating in flight demonstrations will be USAF, Navy, Army, Marine Corps and Coast Guard engineers and their crews, as well as contractors involved in research, application, design, test, prototype, mass delivery, passenger and cargo, and other commercial uses. New York Public Department helicopters will present flight demonstrations of their rescue work.

• On the Mall—public flight demonstration of the helicopter—taking off and landing vertically without ground run-up so it possible to conduct helicopter flight demonstrations on Washington's famous Mall between the Capitol and the Washington Monument. Individual rotor demonstrations have been arranged. One is planned to form flight and static displays here with additional exhibits in the nearby Smithsonian Institution and the National Air Museum. Brig. Gen. F. L. Lorraine, Secretary, Marine Corps, has



CHIEF DISPLAY in miniature in lobby of the Navy Building in Washington is a model sample of the show expected in April. These models of the Navy's rotary fleet are (standing) Bell AH-1W (AF designation) with three; Bell XH-1L (admiral's private craft); EH-11A (AF designation); Sikorsky S-61N; Sikorsky CH-53 (AF designation); HH-3 (AF designation); Sikorsky H-34 (AF designation); Sikorsky CH-54 Tarhe (AF designation); Sikorsky CH-46 (AF designation); Sikorsky CH-55 (AF designation); Sikorsky CH-58 (AF designation); Sikorsky CH-62 (AF designation); Sikorsky CH-64 (AF designation); Sikorsky CH-66 (AF designation); Sikorsky CH-68 (AF designation); Sikorsky CH-72 (AF designation); Sikorsky CH-74 (AF designation); Sikorsky CH-76 (AF designation); Sikorsky CH-78 (AF designation); Sikorsky CH-80 (AF designation); Sikorsky CH-82 (AF designation); Sikorsky CH-84 (AF designation); Sikorsky CH-86 (AF designation); Sikorsky CH-88 (AF designation); Sikorsky CH-90 (AF designation); Sikorsky CH-92 (AF designation); Sikorsky CH-94 (AF designation); Sikorsky CH-96 (AF designation); Sikorsky CH-98 (AF designation); Sikorsky CH-100 (AF designation); 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helicopter development through more widespread use by air crews, and other areas.

* A supplementary study on the future of the componencies, a proposed aircraft which would combine certain flight characteristics of the helicopter with direct forward thrust to achieve lead-flight characteristics of fixed-wing aircraft through mechanical changes.

Possible "fixes" of the April flight show in Washington will be the leading military production models now being.

Is USAF Troop Support Adequate?

Congressional investigation may point the way toward Army taking over control of tactical aviation.

By Ben S. Lee

Steps to bring about a congressional investigation of the inadequacy of tactical air support provided by the USAF to the Army are being taken in Washington. Aviation Week has learned.

Figuring prominently in the over-all situation is the specific question: Why has the Air Force failed to provide the Chase XC-125 assault transport, winner of a recent assault transport competition?

Natural choice for the investigation would be the House Armed Services Committee. While some members of the committee have such an inquiry, the final decision to project a particular aircraft with its power and shortcomings, Rep. George E. Pyle, Jr., D-Calif., has recommended that USAF has flunked a first job in Korea despite obvious defense cuts in tactical air equipment available there. The deficiencies have pointed up the weakness in this phase of U.S. power—a congressional bid will work.

General Donald MacKenzie appears to share this view for something to report. He is the new Chairman of the House Armed Services Committee. The Pacific Air Forces has expressed dissatisfaction with tactical air support. The President promised that it would be bolstered immediately. "I have not noted that the statistics have altered materially as yet," the congressman said.

General Omar Bradley, Chairman of the Joint Chiefs of Staff, followed a recent visit to the Far East, also found a still more urgent emergency in Korea. He said he had been assigned to Korea "to see what could be done to the overall effectiveness of the military and especially railroads," a Defense Department source declared.

* **Army Field Command**—There is a growing feeling in military quarters that tactical aviation should be placed under control of Army. From a practical point of view, no officials of both Army and Air Force claim it would be

useless to seriously transfer "tactical" to Army. There is some consideration being given, instead to creating existing command relations between services.

The reason that tactical air forces in groups of nations would be placed under Army command instead of being allotted for "cooperation whenever the overall air situation permits."

Army plans to do otherwise, however, establish command of all Army Air Logistics Support Groups. Army would like to provide for its own internal needs much as the same manager in Navy's Fleet Air Logistics. It has no desire to antagonize upon the strategic air force of Military Air Transport Service, it was said.

Congressman Walter Noland, a member of the House Armed Services Committee, at a news conference in the case of Army in tactical air support the late American Whiz kids he believed should be transferred from the Air Force to the Army. "I have urged my committee to conduct immediate hearings on the subject."

"The situation is a high ranking Army officer stated to Aviation Week." Noland, including General MacArthur and General Omar Bradley have recognized the need for coordination between air support and the ground troops.

"The Marine Corps, with its own aviation, has coordinated with Korean air and ground attack in its present mission, but has held the latter in close support. On the other hand, when the Army needed bomber or fighter support for its troops, it was necessary to go through an involved chain of command from me service to the other with a resultant waste of time and without the coordination found in the one-command system of the Marines."

"In the present warlike air-ground combat operations, the air force under fire must be able to drop bombs under another. It simply isn't logical."

"The Air Force should continue to command and develop long-range strategic bombing on distant targets, but all of the short-range bombers, fighters and transports should be returned to the jurisdiction of the U.S. Army," the congressman said.

"I do not care to apply that I am against the present air development program—to the contrary I have signed bill several years ago that it should be expanded—but I do feel that we will have a much more effective and better fighting machine if this transfer is made."

* **Army Field Command**—There is a growing feeling in military quarters that tactical aviation should be placed under control of Army. From a practical point of view, no officials of both Army and Air Force claim it would be

First MDAP F-84Es En Route to Europe

First shipment of Republic F-84E "Thunderjet" fighters en route from Republic's Farmington, N. J., plant to North Atlantic Treaty outposts as part of the Mutual Defense Assistance Program, the Air Force has announced.

About 300 F-84Es fighters are scheduled for delivery to European nations that year, with approximately 300 F-84Gs expected to be in French and Italian service by next fall 1952 (AVIATION WEEK Dec. 5, 1950).

Other shipments of both governments have already arrived. U.S. assault manufacturing plants and are now en route to twelve overseas at Chitose AB, Japan, and other USAF technical training installations.

British Defense Minister Kenneth Shand recently confirmed an earlier Aviation Week (Dec. 4) report that the Royal Air Force would be equipped with North American F-86 Sabre fighters immediately. The F-86 component for England, Shand declared, would be used to "fill over 100 gaps" in the gap and that British jets still on the market but not yet operational. AVIATION WEEK previously reported scheduling of 500 F-86s to the RAF.

The North American F-86, according to Pentagon sources is to be supplied to Britain for production in Western Europe in the nation's contribution to air defense of NATO nations. Test and evaluation at Macchi ABP, Italy, of an Avio Olanda-powered version of the F-86 are nearing completion. On the basis of improved performance of the plane over the F-80C, Avio Olanda, the Canadian-built engine will probably be used to power F-86s scheduled for export under MDAP. Canadian Ltd., now licensed to build the F-86 in Canada, currently uses the General Electric J-47 as its F-86.

To meet MDAP commitments, Defense Minister Shand said, negotiations are under way in Washington for a three-way arrangement that will step up the flow of F-84Es to France, West Germany and, possibly, Greece and then direct aircraft to Britain and thus assist in forming.

Other U.S. aircraft scheduled for delivery to MDAP, already confirmed by actual contract, are Lockheed T-33 two-place jet aircraft reconnaissance planes and bombers of North American T-6 transports.

Negotiations are under way between Navy and Lockheed for a missile quantity of Neptun F2H patrol bombers for NATO members.

Under the Mutual Assistance Program for the NATO group, a Defense Department spokesman said, about 600 airplanes of various types have already been shipped abroad.



FIGHTERS rolled aboard silver freight containers at LaGuardia Field, and



FIGHTER planes and cargo terminals a major task over the months' job

Airlines Pinch-Hit for Railroads

U.S. railroad began a mid-mill to reduce labor costs last week when the nation's railroad workers paralyzied train movements by staying home. The full impact of the strike brought new loads to air carriers already struggling to take care of a backlog accumulated from prevent flight cancellations caused by railroad strikes last winter.

The slowdown at precision-clad lines has caused railroad workers to leave their cars and enter passenger cars.

* **Airline Airfares**—Load factor percentages said for the Feb. 2, 72.5 percent, Feb. 3, 73.9 percent, Feb. 4,

70.1 percent, and Feb. 5, 75 percent.

The return engine averaged load factor of about 93 percent, with the figure for Sunday, Feb. 4, as the New York Bureau ran strong to 95.6 percent. The situation on the latter day was such that at LaGuardia Field agents for the airlines reportedly were handling one railroad car each, while the maximum capacity of flying freight to Boston of \$30 per ton.

But only two passengers were said to have stepped from the stranded field. (Regular fare is \$23.82, with tax.)

Airfares saw 27 extra passengers in-

tions and two extra overnight flights up north, the heavier plane being in the northeast.

* **Eastern Air Lines** plane utilization was up to 12.15 hr daily, with load factors higher than 90 percent. The carrier now operates 100 aircraft, four DC-3s, after the New Year, four DC-4s, after the Korean outbreak, long range Superjets were being used to expand.

* **Trans World Airlines** had 113 aircraft for mail, express, and freight. Flying Feb. 4 from New York to Paris, Paris, Chicago, St. Louis, and Kansas City—about twice the normal load. Generally equipment was available to handle the unusual passenger lift.

* **United Air Lines** switched passenger loads for Feb. 2-3 rate 25 percent over the maximum load in the previous week.

Passenger who did not make arrangements, a garrulous and tactful through with their flights were when some service received.

Record headline volume of incoming and outgoing mail, freight and express were recorded by UAL. Figures for Feb. 1, the peak day, incoming mail up 142 percent, outgoing up 176 percent, incoming express up 174 percent, outgoing up 178 percent; incoming freight up 378 percent, outgoing up 486 percent.

* **Slick Airways** business declined, with the freight not putting loads on a priority basis. However, traffic was in and from the Coast, and all the carrier's 26 Convair C-46s were busy.

Plant production machinery was the biggest single category. One of the carrier's biggest assets, the Buick, Oldsmobile, Pontiac division of General Motors, scheduled production to the extent of material that Slick could do it.

Slick was handling 100,000 lb a night for the automotive industry.

At Long Island, Port of New York Authority officials stated 40,000 passengers flew out over the big weekend, a 50 percent increase over the average for the year for midweek, with 1213 plane movements, up 8 percent over the corresponding previous period.

Scheduled airfare had run 131 extra sections over the Feb. 1-3 period, an increase of 500 percent over the average of the previous weekends.

Aero Commander Set For 1951 Deliveries

In spite of growing shortage of materials and accessories, Aero Design and Engineering Co., last week announced it now has on hand sufficient parts for production of its first 20 Model 150 Aero Commander executive twin-engine transports, and is taking delivery orders for deliveries beginning September and

Our Expanding Industry . . .

Frigid winter of General Motors Corp., Dayton, is causing some hitches in expansion to project later, in that in World War II it will manufacture. Accordingly, arrangements are in use for use of the modified G-119C. Approximately 2,500 fine alloy mandrels will be used in the propeller production, which will be in addition to the output of the same propellers by GM's Auto products division.

Fairchild Engine & Airplane Corp. is bringing 30 more of them as Long Island outside for construction of a 1-million sq ft plant. Notice of production at the new facility was not finalized. Fairchild's Engine and Systems division at Farmington, L. I., has gone on a 50-hr. work-week for shop personnel.

Kaiser-Frazer Corp. has been honored by Wright Aeronautical to build the Cyklone 7-jet aircraft at the Detroit plant where Continental formerly built into aircraft in K.F.C.

Boeing Airplane Co. engineering division project employees are working a 50-hr. 5-day week. Chairman of Boeing's St. Louis 23,000 employees are on a 48-hr. work

continuing through October at this west flying Oklahoma City, at a \$45,000 price.

Rise quoted as for the model engine with the Japanese G20-640 engine, with a rated output of 180 hp, each, with Hartnell constant-speed full-feathering propellers, complete flight panel and basic radio including the Type VIII receiver, transmitter and transmitter direction finder.

R. T. Ains, Jr., Army personnel, and that the planes we now in production at the company's recently established factory at Tolokon Airport, Oklahoma City, because of essential general post-occupation Asia and the quoted power would be subject to change without notice.

Commercial models of the plane will be flying before the spring gets into military production. This four-seat-seventeen place transport is under consideration by both the Air Force and the Army, the company said, for use as a liaison-car or ambulance later and utility plane, and as a flying staff car for non-war allies.

While no detailed data on the performance of the production Aero Commander with the geared Lycoming en-

Tecra Coach Co. is looking for additional employees and space to add 500 522-cubic-inch worth of new facilities at its plant in Glendale, Calif., and French. With a factory building of 540,000 square feet, Tecra Coach wants to add 1,900 workers and double its present 300,000 sq ft of space at facilities.

Hughes Aircraft Co. has begun construction of a new division manufacturing plants near Tucson, Ariz. It is scheduled to be completed in six months and can accommodate 1,500 men. A year from now Best Best the new plant for production of aircraft.

Rhein-Mic. Co. is returning to aircraft subcontract work, in which it was engaged during World War II. The number of planes of 30 were at South Gate, Calif., for the construction of a 250,000-sq-ft plant. It has issued a new aircraft department to be headed by Laurence H. Cooper, recently vice president and general manager of Pacific Aerospace Corp.

Minnesota Min. Co. has expanded its work week to 55 hr. to meet stepped-up military demands for landing gear.

gine has just been announced, in earlier design instance (AVIATION Week July 31, 1949) produced the following performance: 100-hp eng output at 10,000 ft, 100 mph cruise speed at 10,000 ft, and 60 mph stall speed with flaps.

A less-powered prototype with 100 hp, Lycoming has been certified by CAA with a top speed of 181 mph at sea level, a cruising speed of 165 mph at sea level, 179 mph at 10,000 ft, and a landing speed of 56 mph with flaps.

AF Base Expansion

Air Force has a green light down 120 bases and Service Commissions for a \$330-million expansion program at 57 training bases.

Expansion would be at USAF bases

* **Fort Sillings, Miss.** Cagney Kohles, Sacramento, Calif., Wichita, Okla., Miami, Orlando, Fla., Lakeland, San Antonio, San Jose, Fresno, Nev., Yuma, Ariz., Tex.; Sheppard, Wichita Falls, Texas, Topeka, Kansas, Waco, Tex., Randolph, San Antonio, San Marcos, Tex.

NAA Report

New orders up backlog by \$160 million from fiscal '50 \$311 million.

New aircraft and missile contracts now being negotiated by North American are 100,000,000, a total value of approximately \$160 million. One order above the \$100 million backlog reported at the end of the company's fiscal year, Sept. 30, it was disclosed last week.

Other substantial orders, in addition to those two groups, are now being discussed. North American Board Chair man J. H. Knobbehouse reported to stockholders in the company's annual report:

"Start of the outlined building of 30 Sept. 30, we will additional quantities of aircraft, aircraft production, or all manner versions of aircraft."

Net sales and other revenue of \$115,260,485 and net income of \$13,862,235 after taxes were reported for fiscal year 1950.

Income after taxes equals earnings of \$7.35 per share of stock as compared to \$5.12 per share from a new income after taxes of \$7,705,408 for 1949 fiscal year.

Dividends of \$1.25 a share were paid to stockholders in fiscal 1950, with a subsequent dividend of 75 cents a share paid Dec. 23, 1950 for fiscal year 1951. Winslow and Adams stated that Knobbehouse's desire for a plane that could not normally be a helicopter and fit in well with the speed of conventional assault.

Knobbehouse was delirious to investigate segments of the aircraft industry at September (AVIATION Week Sept. 21, 1950). To date, 10 aircraft companies have selected designs for the aircraft. The aircraft design for a plane that can not normally be a helicopter and fit in well with the speed of conventional assault.

It is not expected that final decisions under renegotiation requests would still result in an substantial increase although \$84.7 million of the company's 1949 sales are subject to renegotiation by January.

The first 100 aircraft were delivered capital of \$46.5 million as of Sept. 30, compared to \$12.5 million at the beginning of the fiscal year. Cash balance was reported as \$11.7 million and cash equivalents as \$1,067,993, against \$112,556 depreciation.

Dollar increase in sales was predicted

to be an increase in defense production which reached 7,943,000 lb in fiscal 1950, approximately 1.5 billion lb. more than the total for the preceding year.

Here was what North American pro-



CONVERTAPLANE model developed at Wayne University from basic idea of J. Oliver Black of Pionear Products Corp. features wings and engine which can pivot from horizontal to vertical to permit straight flight, low or high-speed flight. This is an in-progress solution to most complex plane requirements set forth by USAF

AF Studies Convertaplane Design

Results of an Army USAF competition for a design competition for a convert plan are being evaluated by the Air Force with a development contract scheduled for the winter.

Specifications were delivered to interested segments of the aircraft industry at September (AVIATION Week Sept. 21, 1950). To date, 10 aircraft companies have selected designs for the aircraft. The aircraft design for a plane that can not normally be a helicopter and fit in well with the speed of conventional assault.

Knobbehouse was delighted in engineering studies to determine general characteristics called for in the competition last June (AVIATION Week May 23). The study confirmed the practicability of earlier Army trials and resulted in requirements for a convert plan capable of a 100-mph forward speed, horizontal ceiling of 30,000 ft, and a service ceiling of 35,000 ft.

The problem involved in making only simple achievement of a flexible aircraft capable of changing its con-

figuration at the lowest point.

Modification programs, including the re-evaluation of the T-33A mission, are being transferred to the Long Beach plant, along with the "non-current" aircraft.

Ground tests of missile rocket boosters are being made in the North American Field test laboratory near Los Angeles, and work on the systems for missile operation is continuing.

North America has decided its re-

quest has come to horizontal and back to vertical while in flight. The ultimate aim is development of a transport or cargo-carrying aircraft transport capable of operation under all terrain and weather conditions. The convertplane currently desired by Army, and which will probably evolve from the present competition, is a one or two-place craft for use in front-line reconnaissance and close support.

Designers working on the convertplane design have pointed out that enormous power required to the initial climb that has been a formidable obstacle. But now the development of the gas turbine engines, with its higher power output per pound of weight, and improvements in internal combustion engines have brought the consumption much nearer.

Estimates are that the first prototype convertplane will appear in the next three years. Funds for the development of the new type plane are being applied jointly by the Army and the Air Force.

As quoted at the Downer plant

modification program, including the re-evaluation of the T-33A mission, are being transferred to the Long Beach plant, along with the "non-current" aircraft.

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FINANCIAL

EAL Strengthened by PAA Deal

Surprise interchange agreement is blow to National and gives PAA participation in East Coast traffic.

The proposed equipment interchange plan of Eastern Air Lines and Pan American World Airways will settle a long period of transients since, and until now, a lack of goodwill has at the same time costly new problems.

Subject to Civil Aeronautics Board approval, Eastern and Pan American propose a through air service between New York and other ports in the northeastern U.S. served by Eastern and certain Latin American points served by Pan American out of the Miami, Fla., gateway.

Surprise Deal—This completely unexpected development may prove to be one of the most sensitive in the history of aviation, writing first in an equally bizarre chain of events set in motion by CAB in September, 1948. But that was just the Board launched an investigation over possible dismemberment of National Airlines. Extensive hearings were conducted to determine whether the public interest might not better be served if various segments of National were joined by Pan American, Eastern, Delta or some other carrier.

When the Board's findings were made known to the CAB during the investigation, resulted in a few statements of its own to make dismemberment difficult if not impossible. One of its first moves was to add 174,000 shares of its stock to W. R. Grace & Co. in March, 1949 at \$5.50 a share, approximating the then book value. (Current quotations are around \$16 per share.) An additional 172,000 shares, at approximately book value, were placed under option to the same group.

National Counter-Move—Shortly thereafter, National offered to sell 146,000 shares to Pan American, pushing the block made available to the Conglomerate. The proposed additional sales to Pan American and W. R. Grace & Co. were contingent upon an equipment interchange agreement between National and Pan American between the New York and Miami gateways.

W. R. Grace & Co. and Pan American partly own Panair which operates along the west coast of South America. W. R. Grace & Co. has strongly opposed a direct entry into Miami for Panair, but has been unrelenting in the adoption of Pan American. A compromise on this issue was resolved

by an equipment interchange agreement between Panair and Pan American at Panama.

Fortunately, the Grace group was an opportunity in the National proposal to force Pan American into a favorable arrangement for Panair. For this, as the present, National required much needed cash and a potentially favorable working at compensation. W. R. Grace & Co. in the meantime sold 70,000 shares of Eastern to complete liquidation of its one-time \$3,000 share investment that first year. This sale was accomplished at a substantial profit to W. R. Grace & Co.

These Changes—Pan American concluded my purchase of the National shares made available for that purpose on the interchange agreement with National being approved by CAB. Fractional banking was held. National and Pan American were unable to put into an arrangement complete in all details the Board agreed. With National's previous financial difficulties largely resolved, the move no longer left the time complications to move on that point.

►PAA-NAL Agreement—The current arrangement contains certain provisions extending the original pending between Eastern and National. Under that arrangement, Eastern would fly its planes from Houston, via intermediate stops, to Miami from New Orleans via National's routes, permitting more economical schedules, as well as providing new service. By the same token, National's planes could provide service over Miami's routes from New Orleans to Houston. If approved by CAB, this arrangement would further strengthen Eastern's route structure, that time in the Southeast, and, could serve effectively in blocking Delta's pending application for a new route in the general area.

The Board has indicated it is strongly in favor of the equipment interchange principle. In fact, in an unprecedented action of its own (Amicus Brief, Dec. 1, 1950), it requested Eastern to waive its right to require that all passengers to travel through air lines between Miami and several midwestern cities. It is this active endorsement of the equipment interchange approach by CAB which provides a favorable atmosphere. For the moment, Eastern-Pan American proposal

gave the Grace group a capital profit of around \$15 million on an original investment of less than \$1 million.

►EAL-Westerly—This adds the Eastern to a growing list of strongly established airlines throughout the country allowed. Only recently the company completed with CAB approval and is now conducting an equipment charter or registered with Northeast providing for the operations of the latter's Convair equipment between Boston and Washington, D. C. This permits Eastern to provide greater frequency of service between Washington, D. C., and New York and into the Northeast.

Moreover, Eastern will immediately increase its traffic between New York and Puerto Rico as a result of a recent decision of CAB approved by the President. This will provide an important source of new traffic and undoubtedly enough will place the company in direct competition with Pan American over this segment. Previously, Eastern's service to Puerto Rico was confined to a route from Miami.

Pan American, previously denied derivatives of its own, including one from Miami to Boston, may now participate as traffic in this area through the proposed arrangement with Eastern. It is highly significant that the Eastern-Pan American proposal is complete in every detail as to the equipment interchange arrangement, including number of roundtrips per week, type of equipment, division of revenues and expenses and all other elements entering into the proposal.

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—Selling Alcohol



...ULTRA-MODERN AVIATION FUELING

Cities Service joins with Eastern Air Lines to inaugurate another great advance

The Flat-Tops are on duty now—making notable service records. With these remarkable new tank trucks, Cities Service is fueling Eastern Air Lines planes at LaGuardia, Newark, and Boston's Logan Airport. Never before has there been any approach to the safe, speedy, convenient fueling now made possible by Cities Service Flat-Tops.

You'll be interested in major Flat-Top features listed here. Each one adds evidence that Cities Service is in the forefront of aviation progress. That's why fields offering Cities Service products are winning preference today, among those eager for top-notch quality and service.

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"Take it to Tenney" is sound advice when you're faced with testing problems. For years Tenney has specialized in designing and building testing equipment to meet the strictest specifications for sand and dust, low-temperature, high-temperature, liquid immersion, salt spray and many other conditions. Absolutely accurate simulation of changing conditions can be obtained by the use of Tenney program control separation. Tenney engineers are always available for consultation and help. You need only ask for their assistance. For information and further references write Tenney Engineering, Inc., Dept. Q, 26 Avenue S, Newark 3, New Jersey.



This Tenney Variable Temperature-Humidity Chamber is built for high temperature, humidity and altitude-resistance tests. 16, 20 & 25 cu. ft.容积 selection, environmental and temperature range -40°F. to 285°F. Relative humidity 20% to 100%. Items from 3 in. to width 36 in.

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Engineers and Manufacturers of Automatic Temperature, Humidity and Pressure Control Apparatus

USAF Awards

An Manual Command Propulsion Division order available in **ARMED WEAPONS** Week, page 10, lists awards made on 10/2/57. Requests for further information should be addressed to Contracting Officer, AFM, Wright-Patterson AFB, Dayton, Ohio, or letterhead AFM/PW/2272.

ABSTRACTS

For one item order, Item No. 114-4411.

McDonnell Corp., McDonnell, Mo., on a lot of 444-547, awarded a contract to the Boeing Co., Seattle, Wash., for the design and manufacture of a 100 ft. long, 10 ft. wide, 10 ft. high, 10 ft. deep, rectangular stainless steel tank.

For one item order, Item No. 114-4412.

Contractor, Item No. 114-4413.

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Contractor, Item No. 114-4460.

For all aircraft hardware 110-12701.
Aerospace Division, Republic, Inc., Binghamton, N.Y., on a lot of 100-12701, awarded a contract to the Republic Co., Binghamton, N.Y., for the manufacture of a 10 ft. by 10 ft. by 10 ft. aircraft fairing.

For personnel elevation 110-12801.

Contractor, Item No. 114-4461.

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AERONAUTICAL ENGINEERING

Safety Need Not Cut Down Performance

Statistics can show engineers as well as management that economics demands both safety and progress.

By Jerome Leibner*

One often hears that safety needs to foster progress, or that performance is of greater importance than safety.

Physical risk has always been inherent in aviation development, and aviation progress should not be permitted to run at the expense of safety. Safety does not mean that safety and progress are concerned, progress and safety should march hand in hand. Economic pressure is compelling it to do so.

Aviation and those whose business it is to study aviation economics declare that accidents have a profound adverse effect on public confidence, on revenue and on the development of air travel.

► **Safety Not Inexpensive.**—A few years ago, airline managers and engineers in the aircraft industry as well widely agree that safety is commercially very important. A few years ago, the chief spokesman against air safety costs was northern Europe, who felt that his designs could capture performance above safety.

Others take a callous attitude. Earth accept the risk and hope it won't happen to us. If a happens, resource will cover a hole, then the loss and traffic will make it pay.

Some engineers claim that reductions in cost of revenue due to accidents are on the whole, cannot be proven. They have a good point because it is very difficult to assess accurately figures on loss of public confidence in the safety of air travel and the consequent loss of revenue following accidents. In some periods the backlog of waiting passengers is so high that even minor air catastrophes of consequences to a frightened public may not affect the load factor.

On the accident map seen during a seasonal decline in traffic and it is not easy to define the difference between the days that the traffic count might be expected to follow without accident and the more actually followed after a well-publicized accident occurs. However, if there is necessary to consider some argument of the economic impact of safety in against performance

if there engineering judgment is to be advanced towards safety.

► **Economic Angle-Side Attack.**—For nearly 20 years now, analyst for the CAB and former consultant for the Congressional Aviation Policy Board, in his "A Study and Approach of United Air Lines," declared:

"... One of the results imposed by airline operations, the surface accident rate on left the year 1946 at 7.7 percent over 1945. In 1947 and 1948, volume was held up to the six billion level in each of the two years. The seemingly steady showing was a direct consequence of the series of accidents which occurred in the winter of 1946-47 and in the early summer of 1948. The sequence of misfortune was followed in a new group of accidents.... All this seemingly disengaged potential fire front and was reflected in passenger load factors."

► **Mr. Speckler.**—In his report to the chairman of Senate Select Committee, for the year 1950, Capt. E. V. Speckler, further states:

"Another favorable factor contributing to the increase in passenger traffic in 1949 was a perfect safety record from August, 1948 through November, 1948, marked only by two accidents so serious and so collision with military aircraft. In these accidents, both of which involved major damage, the survivors were fortunate to be completely sheared off intact. Nevertheless, the latter of these accidents or No. 80, resulted, coupled with other air accidents would end, had an exceptionally depressing effect on air travel during the last two months of the year. It is true that your company's earnings declined somewhat in the face of rising costs and the effect of accidents on total revenue."

► **Cost Economics.**—The traffic department of another large airline, who, studying its various forms of travel with selected populations, has stated, "a well-published accident as well as an accident are felt for about two months." It results in an average loss of 10 per cent in passenger revenue during this period. This loss, at present levels of traffic, would amount to \$3.7 million for one airline.

In addition to loss of passenger revenue which accidents bring about, there are many other financial losses. Loss of use of equipment, investment in trained personnel, liability suits, lost loans. Unlike passenger revenue losses which are proportional, these are terrible and total and long term. There can be no question in fairly exact millions of dollars lost per year. The cumulative financial losses caused by airline accidents are so enormous that the airlines can hardly afford to have them.

Management knows that an accident costs and it is up to us that the moral and ethical climate in executive offices today is such that airline officials feel a social responsibility for the safety of the passengers who entrust their lives to management. When then is it that we can cause airline to make an aggressive attitude towards the adoption of safety developments while we are using our resources as an auxiliary armada?

► **What's Ahead.**—In view of Dr. C. S. White's of the Lawrence Clinic talk to us at the September, 1950, meeting of the Society of Automotive Engineers, in Los Angeles:

"Engines must be planned on design. Let the airline engineer determine, the executives, the pilots, air managers know many ditching drills, fire emergency drills, emergency equipment. Inspection procedures to be used in explosive detection procedures have been studied and adopted in their bases over the past 10 months."

"Ask them, gentlemen, and as their answer you will find the explosives fire and bomb threats infringement of safe operation of aircraft. You will also find the explanation for the removal of no oxygen mask by a commercial air crewman at an unsafe altitude and under stressings conditions during a recent accident; because the mask contained no antiaircraft or means of using a extinguisher. For an example the air crewman—had to assume an oxygen for emergency landing instructions. I do not believe the version which allows planes to be equipped for about a year with just as potentially dangerous. Only, one emergency diffusing unit containing explosive decompression would have resolved this difficulty."

"This is but a sample of many case analysis which may be cited to emphasize the necessity for action and the importance of including emergency procedures in training and reliability work-

Significant details, no matter how apparently obvious, should not be overlooked."

► **Labeled Outlook.**—It may be parenthetical to put myself on the place of management when it comes to safety such as the question of providing transportation to one's own private residence. In the case which Dr. White mentioned, management probably was stirred by an effort to the parallel need for microphones under the conditions mentioned and also in the event of fire or smoke in the cockpit. It turned down the proposal to install microphones if made an item in judgment and not out of negligence.

The executives or consultants that decide such items often balance convenience and safety against the probabilities because the function of an airplane is to operate at a profit. The criterion is likely to be at the rate of economy of it regards a particular item which is relatively durable, such as a microphone, as well as isolated need, one which may not be required in say and years of flying. On that basis they might take the item in the name of safety for other purposes.

Such decisions based on a limited economic outlook will ultimately catch up with the operators, with disastrous financial results.

► **All Factors Important.**—Coming to a conclusion that an improved item may be needed as add-on that it should not be adopted as a fundamental item in safety standards as mentioned. It is true that item A, our fail-safe item, in 50,000 hrs., item B once in 184,000 hrs., item C once in 25,000 hrs., but the cumulative total of all the things that go wrong averaged up in 1950 is aсад-and passenger operation is not guaranteed in even 100,000,000 hrs. of flight, of which 100,000 hrs. of passengers. It is a very good record but not good enough. By due care can reduce many accidents.

Management should at all times recognize that safety in aviation is dependent on attention to all the things that may go wrong. If such safety measure is considered independently of the whole, judgment becomes distorted and may lead to dangerous decisions on the application of safety equipment. A decision to adopt or drop a safety measure can easily be influenced by familiarity with a dangerous operation and the notion that management has had in coping with it. For instance, a dangerous lifetime procedure may have been followed for years without amendment. But if a dangerous act is performed often enough it is very likely to result in an accident, especially so flying where safety is dependent on the correct functioning of the many factors that comprise the sequence of every operation.

ENGINEERS' NOTEBOOK

Fast, efficient, positive attachment for hydraulic lines, wiring accessories.



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lens of situated probability have a great future in aviation when applied to fundamental problems of design and operation.

They are now being widely used in quality control, one action is using them to determine the reliability of aircraft systems. The British have led the way in applying statistics to man's performance requirements before his first ascent. The application of statistical methods is well illustrated in the report on "Time, Unbalance and Air Traffic Control," by Dr. D. E. Oberweis of Cornell.

Statistics can be the tool that will enable the designer to operate to smaller tolerances, compensated sufficient to much dependence on relative skill or on gauges, readings at their present level. Statistics can also be used to determine the optimum of an obvious safety measure, but the answer indicator is not enabling us to feel confident of the statistical approach to its problem.

In preparation for this talk, several authors were asked, "How do you keep your personnel alert? Do things to watch?" and "What special efforts are you making either to exert an incentive to a safety conscious team or an incentive?" Two authors replied that a management review would be a major paper by itself, another replied, "You can never know yourself whether there is your close association with our work."

► **Balder and Carburetor**—One of the objectives of the series was to explore the actions for the numerous criticisms about the "bug" as modern aircraft as enunciated by Macmillan Whittle's open paper by L. R. Keppish's paper "Simplicity As A Goal In The Design of Aircraft Systems," given before the SME in April 1948, the comments by Carl Christianen of United Air Lines "Service Testing of Propulsive Air Transport," paper presented at Flight Safety Foundation, and by others in association with operating experts.

The battle is hottest between the airline engineers who are called upon to provide fuel for deliberation that show up on senior and the designers who hold the thumb according to contract specifications and who are continually beset by the necessity for ever greater savings between weight and performance.

Comments are: "The economy is synonymous with efficiency and with the technical requirements of the basic aerospace and its derivatives create a problem which effectively enters the field of aircraft design."

"It is felt that the manufacturers must delineate between experimental and practical application. Too often we find the specifications coupled with experimental devices which in themselves represent a drain of a safety

problem in the airplane. The use of the customer and manufacturer should be to provide a basic airplane without resorting to new or the last developments to get out of the hole of a 'mixed approach' to the problem."

And so it goes on. It may be seen that, because of the nature of the statistical specification requirements which are established by the designer and other customers, a modern airplane must be equipped with many operating systems which in themselves are complex. Therefore, the customer or manufacturer has more than a grain of sand in the responsibility for the complexity of the modern airplane.

A careful examination of modern airplanes indicates that the manufacturers are using more and more centralized the simplified and more direct training to determine the requirements established by the specification. Generally systems are found to be interrelated with each other, which, in addition to increasing the complication, also increases maintenance problems and is certain can provide conditions which might be undesirable from a safety standpoint. The manufacturer, therefore, is also responsible."

► **Experience Factor**—The operations manager of a large airline telephoned to me recently, "Our men cannot afford to experiment at the testing laboratory for the experience."

Many experts I have spoken to want to overrule prototype models, which would help reduce but would not eliminate all the bugs. One man of breadth is satisfied of dependability to sight. A realistic evaluation of the experience of flight crews reliability system to be in order—a job for a statistician. From the standpoint of design faults this is to appear that supervising engineers are not fully aware of the importance of the element of hindsight experience so that the experience that does exist is spread too thin over engineering staff because of rapid growth of the industry and consequent paucity of experienced design to upper level positions.

On the other hand, the author may have been biased in the part he is calling for reliance from low echelon but highly experienced and competent personnel—mechanics, maintenance personnel, line foremen which the specification was prepared to during acceptance trials.

► **Circumference**—This has a bearing too. At a technical meeting last June the third dimension of one large manufacturer in our transports declared that the safety he measures in his design depends on what his competitor do. So can perception may work both ways.

Circumference also influences safety in the operational field but not as much as in the days when designs were on narrow weather was encouraged by

traffic personnel. Competition is natural between pilots of competing airlines trying to obtain profit by landing competition use to one of the means why some airlines operate to lower fares than others. But the number of the U.S. is as a rule the highest concentration of passengers. Their willingness to compete and coordinate makes of safety. The competitive influence has, as well as the way in disappearing, although emergence of new aircraft may be reduced when a competitive situation reaches an altitude to put them into operation by a certain date.

Competition is a strong undercurrent that must be recognized in the development of safety. An article on the "Development of Aircraft Engineering published in the Journal of the ASME in 1944 has this to say in competition and progress:

"Because of the perils of safety in planning your engineering program it is not at the beginning necessary to accumulate a great deal of knowledge. It is not until the project is well along that you must take chances—bold and courageous decisions. As the effort goes on, you will need more and more to enough to run your running, all out of breath, trying to catch up. So it begins in your engineering contractor to 'steal your work up,' and lay it out, by understanding still development programs, setting a high mark, to shoot for, and then walking aggressively to fulfill your objectives."

This observation is not consistent with what it is the objectives can be more completely and accurately defined as the later. They have been in the past. The operation will then be based on the maximum trouble and expense in executing the many fast hardware that have been introduced by new equipment. Safety objectives should be based on a strong desire to achieve safety for its own sake, not for competitive reasons.

Aluminum Hangar

(McGraw Hill World News)

LONDON—One of the first hangars in the world to be built of sheet aluminum alloy is going up at London Airport now.

With European Airways Ltd. it probably to house in Amsterdam, which will start being delivered to the airline in 1952.

BEA has been pressing the Ministry of Civil Aviation (superior of the airport) for immediate permission.

The hangar will be almost twice as large as those now being used by BEAG at London Airport. It will provide about 7400 sq. ft. of floor space.

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- Top speed at 31,000 ft.....465 mph
- Range at 10,000 ft.....1,075 mi
- Service ceiling.....39,300 ft
- Take-off distance (over 50-ft. obstacle).....3,770 ft
- Place Purchased—Choice of the SD-10 aircraft already in existence, for flying with Nissel, for that jet impact research obviously is a status of expediency but nevertheless appears to be a sound selection. The SD-10 project was begun in 1940 and the first prototype was finished in 1942 as the SD-10N. Inflation. The craft was disassembled and stored during the German occupation of France, then reassembled and the first flight made in February, 1945.

The other prototypes were constructed, after which the final configuration was established in 1948 as the SD-10T. First flight of this version was in September, 1949.

► **Airline Considerations**—With the assistance of the Bretagne, SNCASO constructed a cargo version, SD-10C. This flew in January, 1950.

The Bretagne is equipped with two Wright R-1820-940 DMs at 1,600 h.p. Each of the engines would contribute an hour to the duration of 19 hours for the liaison airplane on the Boulogne-Toulouse-Rouen-Paris route. Another craft is under contract for this airline.

Two of the planes, bought by Air Algiers are now undergoing final tests. And 15 Bretagnes are reported to have been ordered by Air France.

Cooling the Pilot

(McGraw-Hill World News)

Loadless-coal oil for hot pilots has been developed at the Institute of Aviation Medicine, Farnborough, Hampshire, England.

Basic physical principle involved is evaporation cooling. The pilot's perspiration is evaporated by the flow of coal oil next to his skin.

The garment is a complete Nylon undersuit worn next to the body. A series of plastic tubes run through the suit to 92 different points located at points on the body where perspiration is naturally emitted.

According to Mr. John H. Bond, who has been cooler (formerly by ordinary water-cooled, later by motor refrigeration equipment) pumped through the tubes and out the various holes.

Results show the air is small about 12 degrees that the pilot has no sensation of chilling in a dash. Dryness of the air is about 75 per cent.

The same suit could also be used to keep the pilot warm at very high altitudes and low temperatures by connecting the air lines to the cockpit heating system.

SALES & SERVICE

B-23 Scores As Executive Plane

Ex-harbor picked by corporation as best meeting its specifications after evaluation of several planes.

An defense contracts required it to cause to do the use of resources toward its original model of early craft now between twenty years ago and other memory remains. Along with the value of aircraft for that purpose unanticipated, the major question being competitive plane seems to get what type of plane is best for the job.

One consistent plane user, Ford Machinery & Chemical Corp., has come up with a study that goes some answer. The firm was faced with the need for a large, long-range plane to add to its transoceanic fleet and its evaluation provides some pointers on the competitive advantages of such a type for any future fastness willing to walk in the class of planes.

► **Wide Territory**—Ford Machinery & Chemical Corp.'s base office is at San Jose, Calif., in numerous factories, divisions, branches and sales offices are spread over 10 different states and Canada, with 15 of them out of the Mississippi. The Trans-Pacific plane must be based not only to go good land field performances, but also to allow carrying wing ice with a greater degree of safety than other non-engine aircraft.

The B-23 does pose some maintenance problems not affecting the older plane mentioned. Only a limited number of the engines are available, and there is little spare parts available to repair.

Therefore there is a shortage of parts, and service is not always available. The company has been working closely with both B-23 owners in its area to handle parts and service problems and thus far has worked out satisfactorily.

High-altitude performance caused the B-23 to be dropped.

In the opinion of the designer, the B-23 had the disadvantages of high speed (255 mph), range (8 hours), single-engine performance with maximum load pounds maintaining altitude at 14,000 ft., providing the desired margin of safety for year round flying across the Pacific. The plane's wings are stressed for approximately 150 ft. and stability is good—increased when flying on instruments in rough weather.

Performance was found to be good at 30,000 ft., and possible up to about 35,000 ft. The aircraft flies at a relatively constant altitude and altitude rate to avoid using so much fuel because much of the Wright 1500-h.p. engine combined with high lift wings were based not only to go good land field performances, but also to allow carrying wing ice with a greater degree of safety than other non-engine aircraft.

The B-23 does pose some maintenance problems not affecting the older plane mentioned. Only a limited number of the engines are available, and there is little spare parts available to repair. Therefore there is a shortage of parts, and service is not always available. The company has been working closely with both B-23 owners in its area to handle parts and service problems and thus far has worked out satisfactorily.



SEAPLANE BASE GROWS

One of the more active bases in the East is Lurey's Seaplane Base, Round Lake, N. Y., which is the headquarters for 14 seaplane and amphibious. The operation has shown a steady growth since it was established in

Pictorial Computer Helps Pilots Score

Follow private pilots and 15 with intravenous ratings "play" 400 navigation problems on a Link trainer without a single failure. The secret: A special program computes Aviation Week Oct. 27) installed in the Link.

The same pilots then track the Link using standard needle and pointer as stimulus, followed navigation course signals for 45% easier problem set related to wire net 50 ft. above the ground level. Using the pictures displayed, they play the game until they complete the Link tests with the synthetic display, trains were slaves, unexecuted uses were made and pilots showed no equal improvement over other games.

The pictorial simulation was especially built for the net which was carried out with CMA funds at the University of Illinois. It would not be practical for installation in planes in its present form. But as development continues, Allis-Chalmers Co., says a portable unit would cost about \$100.

Company Planes Base

A group of eleven Boeing, Wash., investors have purchased an airport and all its facilities for use as a corporate travel facility. All charter services and flying school operations at the Field-Hawkins Boeing Airport are being closed, only the foundation of the Washington City Air Patrol will remain.

Meanwhile, at the Rock Creek General Airport, Ga., the installation will be run as a cooperative venture organized at \$150,000. There are three flight strips, two large and several small hangars, an administration building and restaurant. Further expansion is planned.

EQUIPMENT

Huge Savings in Inventory Control

PAA, only partly through long-term program, already has slashed value in half and improved quality of stock.

By Scott H. Beiriger

After a series of world strikes, Pan American World Airways has tackled a painful cleaning inventory and cost of storing it down for all its aircraft.

When the working costs are completed, PAA's controller is expected to be moved to a shadow of its former size, with the airline picking up millions of dollars parked loose from its shelves. ■ **THE ALL-OUT**—In cutting inventory down to size, Pan Am has gathered evidence of vital interest to other large airfreighters, indicating its inventory problem has been widely replicated throughout the service, and perhaps affecting airlines or particular. The company has forced inventory to expand its static pipeline capacity—a role that can demand items of hand-carried dollars out of company coffers.

The airline's Pan Am has cut 50 percent off inventory increased as far back as 1968 and is another of signs.

To date, the carrier has analyzed about 50,000 of a total of about 118,000 items. It has reduced its inventory down from 55,000 pieces to a number expected finally to fall between 23-27,000. While larger quantities of the remaining items have been eliminated, the slice in inventory value still is as close to the slice in number of items, with an original value at \$3,000,000 reduced to \$1,000,000 (less than 10 percent of reducing inventory and half done).

■ **WHAT'S NEW**—Done—there are a few scores of PAA's inventory reduced.

■ **ADDITIONS**—and—increased—from 139 different types to 17 (914 eliminated).

■ **GENERAL**—Reduced from 131 different types to 35 (113 eliminated).

■ **OLS**—Reduced from 94 different types to 31 (63 eliminated).

■ **Rubber**—Now—Reduced from 179 different types to 10 (126 eliminated).

All items retained, or newly-acquired after evaluation to replace materials eliminated, are being distributed on a worldwide basis throughout the airline. Asia, Latin America and Pacific Islands.

■ **MILITARY**—Value—Significantly. Pan Am is going over to an AN part number basis whenever possible in starting inventory items. Thousands of AN parts, basically identified under

"general supply" items can be ordered as much as possible in fixed quantities at fixed prices.

■ **PROMISE**—most contracts can be arranged with suppliers who, knowing the airline's needs over a given period, can easily schedule production and meet them. Also, Pan Am can use its power to agree binding provisions as accurate estimates of its yearly consumption.

■ **FRESH**—group of the entire field of procurement has resulted from education, via alternative suppliers and their products. This has forced up the most efficient supplier base Pan Am's standards. And in an emergency, an alternate source of any item will be known immediately.

■ **HOW MUCH SAVINGS?**—All these points lead to millions of dollars the carrier expects to realize during the years ahead. In addition, economies from reworking existing and tight pricing of many supply-made and price-as-changing. So the main question, the airline explains, is not whether the procurement bid that price, for example, will be less than last year's but how many millions will be saved on the bill tickers as a result of standardization.

This doesn't necessarily mean that Pan Am definitely will not have a catalog in 1971 since it is 1950. The job of ordering inventory is not over. Procurement requirements may change, as an accurate estimate can't be made.

Henry H. Berke, assistant supervisor in charge of sources of supply, told Aviation Week that as the basis of present references "all who are concerned with the project can reasonably anticipate that an completion of standardization, savings should not represent less than 10 percent of the total procurement bill."

Pan Am has been spending recently about \$25 million per year procurement, not including purchases of aircraft. If bid to the figure, said Berke, did not do that, the annual savings would be around \$2.5 million.

Berke and his associates naturally are reticent in estimating total savings expected from a project not yet completed. A safe bet would be that the savings of 10 percent has an extremely wide safety margin for error.

Careful evaluation gives weight to the possibility of savings representing 20 percent or more of the annual procurement bill, although Pan Am did not sample this.

In addition to the fact Pan Am has been spending annually about \$25 million for procurement, two other clues

lead to a conclusion that savings are more likely to approach 20 rather than 10 percent when the program is fully built out. A \$3.5 million reduction in inventory value—representing a 10 percent cut in that part studied—already has been realized, and that saving has been made from inventory averaging only about 20 percent of the value of total inventory.

It's conceivable to presume any average item in hand is yet to be replaced with a new better and inventory holder. A 20-percent saving represented in a yearly level of about \$25 million would not approach \$4.5 million—approaching Pan Am's net profits for 1969.

■ **SETS**—The airline started buying the groundhog for standardization programs in 1961. Its first step was to let in one place every item stocked by the three divisions. This task was headed up by Robert Housley, systems stores manager, who compiled 21,000 items and his committee—now renamed in the three divisions, purchased separately data collected from bases promoted all over the world was a major catalog—running to twelve big volumes.

Information gathered in compiling that catalog emphasized what Pan Am already knew—that emergency operations on a worldwide scale under multiple contracts with the usual service delays. With Mr. Berke doing the work, however, the catalog could be produced in a matter of trivial overhead, followed by fast conversion to paper-free system bid control on inventory that required drastic streamlining.

"Unbelievable" is being exercised by a five-man Systems Standardization Committee, headed by various groups in the three divisions who are experts on the items under scrutiny. The committee now is headed by Pan Am's chief division, J. T. Headen, chairman, Robert H. Housley, vice-chairman, W. J. Morris, manager, procurement, Latin America; Ralph Deakin, staff and customer Latin America division; and Robert M. Bear, standardization supervisor, Pacific Alaska division.

Finally, Pan Am's three divisions assigned authority to purchasing equipment for their own units but then took tightened up considerably, and through a monitoring system at Pan Am's central office in Long Island City, N. Y., it can easily be determined if any division purchasing order does not exceed standardization requirements.

■ **HOW IT WORKS**—All groups throughout the system are required with standard catalogs to quote procurement. New standards are added to memory, after just one consultation at the three facilities. If the divisions cannot get

together on a part, the Standards Committee chairman is responsible to hand down an interim decision.

He may decide, for example, that all divisions start use the same part no. if there is sufficient store, percent mix of items to denote. If a division is not satisfied, it may appeal to Franklin Ginchik, Pan Am's executive vice president.

How under study are broken into three general inventory classifications, each with two levels of inventory handling. A 20-percent saving represented in a yearly level of about \$25 million would not approach \$4.5 million—approaching Pan Am's net profits for 1969.

■ **SETS**—The airline started buying the groundhog for standardization programs in 1961. Its first step was to let in one place every item stocked by the three divisions. This task was headed up by Robert Housley, systems stores manager, who compiled 21,000 items and his committee—now renamed in the three divisions, purchased separately data collected from bases promoted all over the world was a major catalog—running to twelve big

volume.

In this part of the committee that has been most active, the value of stored items, \$3,000,000 to \$1,500,000. A major 20-standardization effort in the FESPA group, which are even difficult and will take longer, is expected soon.

Evidence that substantial savings are expected in this group is carried in a statement in Pan Am that "the committee is firmly certain basically thousands of items currently carried in classes 1 through 6 may be in classes 7-9-10, but cannot be recognized as such due to differences in successive year's part numbers."

High Altitude Unit Pressurizes Radar

An air compressor, designed for positive operation at 50,000 ft altitude principally in pressurizing aircraft radar installations with dry, nitro-ox, has been developed by the Barnes division of Lear, Inc., Kirtland, Ohio.

The new part number, Type HD-1040, by the U. S. Patent Office, claims a maximum atmosphere at 9,000 ft, a minimum of 10 cu in. cu in. of air while maintaining 10 lb. Ig absolute pressure. At sea level it has a capacity of 1750 cu in./min. Roots-type.

The fan motor positive starting and operating at -40° F. is assisted through use of self-temperature "Comptrol" (constant temperature compensation) thermal switch, the air entering the fan and for a service life of 1000 hr. with no damage in pressurization, and has a duty cycle of 15 min. on and 15 min. off with occasional 30-min. periods of operation permissible.

The 5.5-lb air compressor is powered by a 4-hp motor, a 115v. ac., 400c., single-phase drive, running 4,000 rpm, operating at 7000 rpm. Only belt bearings are lubricated and no maintenance lubrication is required.

First U.S. turbine transport a reality through private enterprise—initiative and Turbo-Prop power by

Allison



DIVISION OF GENERAL MILLS
INDIANAPOLIS, INDIANA



SEE BACK COVER



Navion NEWSHEET

'51 SUPER NAVIONS SOLD OUT!

In 27 years of building and selling aircraft, we've never known a greater demand for Ryan planes. The entire production of the better-than-ever '51 Super Navions is sold out in advance. Hundreds more would be needed to satisfy the market demand.

PRODUCTION SCHEDULES

Due to an increase in high-priority military work, 1951 Navion production is being limited to about one-third of the number originally scheduled. As soon as the critical international situation will permit, Ryan will resume full-scale production of Navions for the civilian market.

SERVICE, PARTS AND USED PLANES

While civilian Navion production is curtailed, Ryan Customer Service and Spare Parts activities will be in full operation. In addition to service and parts, Ryan Navion distributors will continue to offer the best in reconditioned, modernized Navions for purchase or charter.

RYAN'S ROLE IN NATIONAL DEFENSE

Ryan makes many vital military items, including Ryan-developed jet-propelled piloted planes, huge fuselage sections, special-type fuel tanks, control surfaces and other major airplane components, as well as stainless steel parts and assemblies for jet, rocket and piston type engines. Ryan is also doing design and development work on many important advanced-type engineering projects.

Ryan Navion

RYAN AERONAUTICAL COMPANY
405 LINCOLN AVENUE, SAN FRANCISCO, CALIFORNIA

NEW AVIATION PRODUCTS



operating life cycle of any equipment in which they are used.

Some typical applications:

- Seats for tanks made down in jet engines and rocket motors
- Clutches to accommodate high frequency vibration in aircraft exhausts

Bearings before are made in various sizes and gauges in stainless steel. In stainless, silicon, silicon steel and other available alloys. They can be supplied with fittings to user specifications. Adress 40 S. Scott St., Newark, N. J.

Controls Fuel Flow

A precision metal developed and produced by Montell Corp. is being used to control automatic selection of fuel tanks in the Northrop F-89 Scorpion, according to the maker.

Recent qualification tests, says the company, show the switch to be extremely rugged, robust to high frequency vibration, yet sensitive to a high degree. It meets USAF environmental and qualification requirements and is explosion-proof construction as well as compliance with USAF Specification 41003B, adds the firm.

Other applications of the switch include selection across four tanks to control selected delivery pumps, fuel tank pressurization control and use in jet engine fuel control systems.

Midtron has designed and is manufacturing a variety of pressure-sensitive switches. For use with water, alcohol, gasoline, hydraulic fluids, liquid oxygen and acids. Address 430 N. Highland Ave., Los Angeles, Calif.



New Airline Seat

A new type of airline seat which adapts comfortably with the shifting of the passenger's weight has been developed by Jean R. Bennett, assistant to the president of Braniff International Airways. The seat framework is of tubular construction and the body is a leather design bed together with springs. Also included is a built-in headrest which can be folded back and a built-in footrest.

The unit is constructed to absorb turbulence shock. It has been tested at a steep angle to determine the standard air-line seat strength. Mr. Bennett has been displaying his invention to military and civil aviation agency engineers and to airline officials.

ALSO ON THE MARKET

Westinghouse electric lights for submarine lighting and other industrial uses. Lighting applications are mounted as removable heads which will accommodate two or four lamps each. Made by Westinghouse Mfg. Co., Elizabeth, N. J.

Vacuum test chamber complete with pump and direct reading altitude gauge is designed to test aircraft components at very low pressure point up to the equivalent of 60,000 ft. Made by Tinsay Engineering Co.

Kris-Klatch, chemically treated leather cloth or vinyl upholstery with clean and pleasant odors and popular from big game and racing. Made by Gandy Products 360 E. 47 St., Brooklyn 3.



Bellows for Aircraft

Flexible, welded diaphragm bellows, designed for high pressure use in valves, for shift seating, and for applications requiring maximum reliability in temperature extremes, are now available from the maker. Delivery starts at 1 in. max. dia. 1 in. 30 sec. to 24 hr., customer fabric assembly including gear box, weight 22 lb.

The units have urethane-coated bottoms and, stretching to 20 ft. max., can withstand constant pressure stroke without distortion. They are engineered to meet specific needs and to equal the

explosion-proof motor "designed as an emergency stand-by unit on a supersonic research aircraft," has been developed by Electrical Engineering and Mfg. Co.

The motor will operate as an ambient temperature up to 70°C. Motor current is sustained and high temperatures are withstood without damage to the motor. Delivery starts at 1 in. max. dia. 1 in. 30 sec. to 24 hr., customer fabric assembly including gear box, weight 22 lb.

EIMCO also is marketing a direct-drive, high-speed hydrodynamic pump motor designed for operation at 7200 rpm. The unit drives the pump impeller at speeds up to 12,000 rpm. Made by Lord Mfg. Co., Freeport, Ill.

Avionics Navigation Work Spurred

Mobilization step-up speeds development of present and new all-weather aid equipment projects.

The mobilization step-up of equipment development for cold-weather avionics, the "Navigation Development Board will issue spouse several new avionic development contracts. And programs on many present development projects, already moving faster than originally planned, will be sped even more.

Among the all-weather equipment ANDB is pushing now:

- **Minimum altitude DME.** No light plane or light-jet transponder-distance-measure system is built yet, but NORX has got both in almost complete form.
- **Automatic precision approach radar.** This has been hurried more than any other development project, but testing of the complete development model, previously set for March April, is delayed because Air Force changed the band specification. Production contracts will be let based on tests of the model at most completed point to band specification change.
- **DME and FAR evaluation.** Present production models of ILS and precision

approach radar are undergoing extensive tests to determine the exact degree of accuracy of each, make relevant calibration checks.

• **Automatic precision approach radar development.** Has reached the point now where a typical airborne transponder of the ILS type will be used this spring on FAR approaches, just as the CAA developed pathologic techniques.

• **100-kHz and 500-kHz ILS.** The experimental development model of 500-kHz ILS by Federal Telecommunications Laboratories has been accepted and taken over by the Air Force; it now awaits evaluation at Wright Field. The 100-kHz ILS of Spectra will be ready to undergo acceptance tests by mid-May.

• **Traffic control and ANDB plans to fit development contracts within a year for traffic control centers.** This will be a first step on which microchained machine automatically moves across the map in the course and speed enabled only a microchip posted board by the traffic controller when he gets position reports. Each traffic control center with such a display would be able to take over control without the present need for phone calls. On passing over control, ATC No. Five would merely post a button and the microchained machine and the microchip would move up on the same board of ATC No. Six. The posting board will carry all pertinent data. The pictorial traffic control display map carries identification, position and altitude.

In the ultimate program, radar will activate the automatic display machine, and the machine themselves may be electronic parts instead of mechanical bags.

The traffic control project of ANDB is still in the requirements research stage because interpretation of requirements is subject as considerably more intricate now. ANDB has drawn a calculated traffic problems position paper to work out the problem in laboratory form, eliminating all but the most promising solutions before undertaking flight tests.

• **Automatic landing distance eliminates.** The Air Force development of automatic landing distance-by-barometric altimeter will start soon at Wright Field. Present landing callouts for this to allow one glide path cannot allow the ILS at about 50,000-ft altitude.

The Air Navigation Development

Wilson Laboratories, the original sponsor of "Precision" navigation are NORX board itself.

• **Two new ILS systems.** The two ILS developments aimed at adding the option of terrain avoidance that bend the beam beams are almost ready for Air Force evaluation before procurement decision. The CAA has tried to fix the problem, in Air Force tradition, by use of a parabolic antenna, to narrow the beam and force it all in one direction. The Air Force development of broadside, or in-line, antenna transmission, the basis for the terrain-avoidance and offsetting Air Force ILS. The present procurement evaluation study has confirmed this type of development and the CAA developed pathologic techniques.

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• **Performance development of small DME.** ANDB would probably get CAA to sponsor development contract for both types—perhaps two contracts for each type.

The small place DME gear will prob-

ably have limited range, manual switch and volume control of distance and azimuth.

• **Small DME.** The development of both types of small DME gear. The two major Air Force Navy versions of VOR are the ARN-19 of Collins Radio and the ARN-20 of Federal, both of which are high performance sets. There are the existing Spectra DME sets of North, Lee Stock, Minibell among others, which serve the private flying field.

• **Performance development of small DME sets.** ANDB would probably get CAA to sponsor development contract for both types—perhaps two contracts for each type.

The effects of use travel time delays and separate route by various criteria and each case considered individually. The effects of routes in altitude may have profound effect on certain pathological conditions.

The report was prepared by Col. B. A. Strickland, Jr., USAF Medical Corps and Dr. James A. Reilly, Randolph Field, Tex. It appeared in the April 20 Journal of the American Medical Association.

that only seven percent of the case reports recorded symptoms of any kind during flight. Most symptoms were due to effects of cabin altitude as the cause itself. They were minor symptoms and not serious enough to require hospitalization. About 97 percent of the cases were brief. Frequently, the patient was unable to return to normal activities. This consisted at rest, sleep, shower, in airport and around town.

Less than one percent of the patients were reported for eye symptoms. On this matter of patient adaptability for air travel, the doctor's report has this to say:

"The effects of use travel time delays and separate route by various criteria and each case considered individually. The effects of routes in altitude may have profound effect on certain pathological conditions."

The report was prepared by Col. B. A. Strickland, Jr., USAF Medical Corps and Dr. James A. Reilly, Randolph Field, Tex. It appeared in the April 20 Journal of the American Medical Association.

CAB Urges Fare Hikes On Coast Coach Runs

Civil Aviation Board has "coughed" up its earnings flying coach service on the San Francisco-Los Angeles run to ratecoach fares from the present \$9.95 to 1 cent a mile, to \$11.75, or just over 16 cents a mile. This may be the tip-off to a later industry-wide boost of air coach tariffs.

The Board states that almost all passengers may be moved by air transport. Today," the reporting shows data, "most of the available expert opinion holds medical care is concentrated in medical centers. In many instances patients requiring specialized care can be transported to such a center. In general, the transportation of weaker conditions and types of acute situations, MATS, were identified with considerable concern in commercial airline operations."

One third of the patients concerned were stay-at-home cases. This brings up the one problem which must link to open up the lucrative large-scale travel by air as this results to specialist doctors and medical centers. That problem is resolution of the tick as a passenger plane. A suggested solution is to use a private plane.

The recently developed equipment will be MATS to fly medicals efficiently and comfortably is quickly installed in an otherwise out-of-a-plane plane. Then, a few flights stabilized as income cargo plane would make them capable of transporting patients in addition to cargo.

Medical cargo and patient loads should offer little problem, as revenues from healthy passenger loads in what the patient appears worth.

The study of MATS case showed

NWA Reorganizes Operations Setup

In a shakeup of its top operations, management and administration personnel, Northwest Airlines last week moved to tighten up its organization, presumably in a result of its operational record of recent months.

President Civil Aviation has made the following key personnel changes:

- K. R. Ferguson, who has been vice-president for operations and engineering, has been replaced by Frank S. Field, formerly western regional manager.

- M. B. Fowling, who has been operations manager, has been removed from that post and has been replaced with those of Dudley S. Carr, manager of flight operations.

- Ralph E. Gross, manager of mechanical operations, has been relieved and his duties taken over by E. R. Gandy, principal superintendent of aircraft maintenance.

- D. B. Benson, chief engineer, has been removed from his post directly to Field Service. Washington sources said that the changes were made by Northwest Airlines in regard to the most strenuous difficulties of the airline, including accidents and some incidents in which there were serious aircraft damage or impact.

- It was understood that the personnel changes were made by Northwest own agreement, without specific representations by the government controllers, except that the company's arrangements strip off from its management organization more completely than it had been.

Brazil's New Rule

The Brazilian Air Ministry has issued a new regulation defining whether or not to grant air routes licenses to operators.

All new licenses will be issued for a six-month provisional period. If the newly licensed carrier does in the second three months less than half the business it had in the first three, he loses the license.

MATS Pacific Lift Utilization High

The Pacific division of Military Air Transport Service logged more than 10,000 hours of transport flying time in November.

The division came within 5 percent of its theoretical "target of perfection" for reducing turn-around time and raising utilization. "Perfection" is de-



PUSH-BUTTON FLIGHT INFORMATION

Push a button and information on any Trans-Canada Air Lines flight out of Toronto lights up on the screen. The push button is being used extensively by air travelers to get information quickly on route.

WITTEK STAINLESS STEEL *Aviation* HOSE CLAMPS

For Over a Quarter Century
The Standard of The Industry



The Wittek Type F85
Aviator HOSE CLAMP

Utilizing the Wittek Floating Bridge, the F85 has been tested and proved for dependable service in all types of aircraft applications.



The Wittek Type WWD
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Available in all standard aircraft sizes, the WWD is also furnished in large diameters up to 12" for dust and other special applications. Permits easy installation when hose is in place.

Most current AV specifications
and have CAA approval

WITTEK
MANUFACTURING CO.
4208 W. 24th Street, Chicago 22, Ill.

to exact performance of the pressurized flying boom.

Transoceanic times for C-54s and C-69s at the MATS Pacific division at Haneda Air Base, Tokyo, have dropped steadily, MATS reports.

The C-54s of the Trans-Cameraman have also shown improved times, says MATS. The main cause of project times improvement due to the long flights from the U.S. to Japan, whereas the MATS planes operate from Hickam Field.

CAA Announces Airport Program

CAA's first National Airport Plan sets civil airport improvement needs of the U.S. and territories at \$904,831,000 for 1963 projects for the three-year period—calendar 1961-1963. This includes work on 3,777 airports not yet listed and additional work on 2,556 already listed.

The new National Airport Plan (as of Dec. 30, 1958) lists civil airport needs at about \$306 million a year. But only about \$40 million may be spent on civil airports in the coming year, if Budget Bureau recommendations follow. This compares with a previous rate of about \$90 million annually.

Reasons for the big cut in civil airport improvement is the whipping out existing airport programs, which may run into the billions. The total is local 1962, compared with about nothing listed in the World War II era.

But the big hole in civil airport programs will be partly filled by the military construction. Figuring a long-term civil establishment factor of 25 percent for military bases, the military may contribute about \$125 million directly applicable to the National Airport Plan costs. So the combined total of about \$165 million annual contributions could to civil airport planning will probably cover half the \$180 million called for by CAA.

The National Airport Plan reflects "needs," as analyzed by the CAA Office of Airport.

If the plans were followed through, the local agencies would put up \$446,395,000 and the federal government would put up \$445,683,000.

The plan for the next three years includes 61 heliports, 312 airports, 575 large airports (Class 4 and larger), and 4140 small airports (Classes 1, 2, 3).

Work needed on large airports is estimated at \$446,395,000, the small airports at \$445,683,000. Thus, 40 percent of the money is needed for the 575 largest airports, 10 percent for about 4000 small airports, and 2 percent for the approximately 400 smallest bases and heliports.

ATA Supports WAL On Mail Pay Appeal

Air Transport Ass'n has asked the Civil Aeronautics Board for permission to assess an behalf of Western Air Lines' Western Air Lines' cost-of-mail petition that the \$1,099,000 paid out of its Los Angeles-Denver route is revenue offsetting the need for mail compensation already paid.

CAA says in effect that since the government pays the airlines the route, the airline must give back to the government the postal route rate of 10¢.

Craig wrote to the Civil Aeronautics Act in the language of Section 416 (a). The authority "is finding the fair and reasonable rates of compensation and consider the need of the air carrier" for compensation sufficient to ensure performance of the services "and, together with all other means of the air carrier, to enable such air carrier under efficient management to continue the development of air transportation."

CAA argues that the "air carrier revenue" mentioned in Section 416 is the post route rate of 10¢. ATA is objecting over the precedent by which CAB would make retroactive claims of overpayment and mail payoffs on earlier routes a profit on rate of a route or capital asset.

The Post Office has countered ATA's petition to intervene in the mail route issue by pointing out that the PO says ATA is not only too late but has no direct interest in the case.

The Board did not rely on any past precedents, however, the share-rate under the Western offices mail rate, to reject the application of 1947 per 3747, 661. Little earlier precedent is available. For instance, the American Overseas Airlines' site to Pan American World Airways was at book value, so the problem of profit on route rate did not arise.

Capital Rings Bell on N.Y.-Atlanta Run

Capital Airlines' new Atlanta-New York nonstop Constitution service had about a 50-passenger load during the first two weeks of operation and is driving formidable new competition for Eastern Air Lines. That new service has been on Delta Air Lines' application to merge with Northeast Airlines and obtain a New York-Athens route from Civil Aviation Board.

Until Jan. 10, 1960, there was the only nonstop connection, Atlanta-New York nonstop. Eastern has 60-passenger Constitution. Eastern now is up against Capital's new de luxe service,

actively presented, using a 50-passenger seating density. Constitution has less a lounge, bar and complete with port and cabin luggage.

Capital got CAB approval of Atlanta New York nonstop service three years ago. But Capital didn't use it then because financial problems at quashed pending status this springing new route. Almost everyone but Eastern longer Capital staff still had the opinion of operating the route.

Delta Air Lines made application last summer to CAB for merger with Northeast and a New York-Atlanta route as soon as possible. A joint Delta-Northeast will be the seed for a link between the South and the Northeast, via a New York-Atlanta route.

Capital's whitewash promotion and negotiation of the service has resulted in a new face on northeast routes to the midwest.

Says a Capital officer: "This route puts us on Main Street."

Hawaiian Scheduled Air Travel Hits High

Scheduled air travel in Hawaii has a new high of 42,900 passengers in 1959 and the mid-winter 21 day record safety record stayed intact.

Total travel in 1949 was 36,862 passengers.

Hawaiian Airlines Ltd., 21-passenger veteran of island flying, carried 11,625 passengers while the new competitor, which now calls itself TWA—the Alaska Airlines, named 55,379 in its first full year.

Both were up from 1949 when Alaska had 55,379 in winter months and Hawaiian 30,488 for the year. But Alaska was still struggling along in the red, helping keep a U.S. mail subsidy to both it.

Capital Buys Two KL 749A Connies

Continuing its radar on the board lead policy, Capital Airlines has bought two Lockheed Constellation L-749As for delivery January, 1962. Eastern Air Lines is negotiating buy five units of the same.

The two new Convair KL 749s will double the L-749s in service. The first L-749s are due to start flying in December.

Lockheed will modify the L-749s in favor of Capital to about the same heavy layout as the five L-749s that already operate. (These were originally KL 745) planes bought by Capital last year at a low price due to

Capital argues the company would probably not have bought any new planes this year, but it figured

these are all that are likely to appear on the market for some time.

The company is making arrangements on the two L-749s now, will make some further payments this year, and final payment in full as delivery and leasing. The company will need new financing to pay for the planes under normal business conditions.

TAL Will Fly Navy Catalinas in Pacific

Transoceanic Air Lines—low bidder among 12—but former pilot by the Navy is supplying an aircraft for the U.S. Navy fleet transports.

Transoceanic will call their Navy-harborized amphibious PBY Catalinas, supplying its own crews. The planes will make the round of the former Japs' now-mutated islands once a week for 15 months. Total estimated service in that period will come to 900,000 plane miles. Passengers, cargo and mail will go by Transoceanic's new service from San Francisco.

The Navy wants private airline operation, if the service can be supplied cheaper than what Contract hire has been estimated yet.

Tahiti-Hawaii Run Proves Feasible

Fiji-Hawaiian Airways has made an first DC-4 exploratory flight to Tahiti using a chartered Transoceanic Air Lines plane. With the flight a success, THA plans to run a monthly schedule—the first as about Feb. 20, from Honolulu.

Time on the first DC-4 was 16 hours round trip Tahiti-Hawaii, via Chuuk. French officials at Tahiti test road the 12 stops on the return trip.

The new route goes first to Chuuk, then turns inland to the southwest, according to Transoceanic's reports, en route to Tahiti. This route lies north of the right coast of Bora Bora, French Society Islands, in the South West Pacific. Last year's trip to Tahiti via seaplane plane. The complete route is about 3000 miles each way.

Ozark Starts Service St. Louis to Tulsa

Ozark Air Lines last week started operating in St. Louis-Tulsa route, via west, via Springfield and Joplin, Mo. This brings Ozark's present service to 21 cities in eight midwestern states, with chief stops at St. Louis, Memphis, Chicago, Indianapolis, Tulsa and Kansas City.

The St. Louis-Tulsa route is Ozark's ninth to be activated—Jefferson City,

Allison powers first flight

of first
U.S.

Turbo-Prop transport

Allison

MANUFACTURER OF
GENERAL MOTORS
TURBOPOLIS
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AIRCRAFT BOLTS

CLOSE TOLERANCE, HIGH-
STRENGTH SHEAR BOLTS —
made to latest NAS Standard
and available in sizes up to 1/2" dia.
formed by rolling after heat
treatment, an important UN-
BRAKO feature. Full range of
standard sizes.



HAS INTERNAL WRENCHING SELF-LOCKING NUTS
meet all requirements of latest NAS Specifications
Superior safety ratio. Sizes from 1/2" to 1 1/2".



EXTERNAL WRENCHING NUTS

Integrate the famous FLEXLOC self-locking principle
and one-piece, all-welded construction. The exceptional
reliability of this construction has been proved by the sales
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Other extruding aluminum website:
Aluminum handle with aluminum weight
Approved under latest MAS Specifications

Large locking surface

Positive self-locking—"snug-shake loose."

Temperature range is -40° to 250° F

No special tools needed—use standard 12-point socket
or lock wrench. Designed for use in cramped spaces
Sizes from 1/4" to 1 1/2" M6 Thread Series

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ONE-PIECE REPAIR-DRIVING NUTS

The new unique FLEXLOC is both a snap and a click nut due
to its unique design. It is extremely reliable, even under
extreme vibration. Torque is unusually uniform within a
few key pounds. "Thin" and "regular" types, NC and NF
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Mo., and Manila, Okla., are left off
the route now, at their airports do
not even offer so to transport passengers,
Dodd states.

Outfit operates only DC-3 aircraft.
The carrier is negotiating to have
American Airlines handle all ground
operations at Tokyo, Taito, and Spring
field.

The new segment will be served by
four flights daily—two round-trip, two de-
partments.

SHORTLINES

► **Air Express**—December air express
revenue in the New York area totaled
\$724,901, just one percent under the
second December of 1946, and 24 per
cent over a year ago. Number of ship-
ments—151,493—was up 5 percent over
December 1946. Average weight per
shipment was 1.65 lbs. Total weight
19.5 lbs in January to 27.2 lbs in December.
Total 1946 weight in 1946 was
25 million lbs up 14 percent. Seasonal
pattern was distorted in the second
quarter by the Korean war, which caused
a surge starting in August.

► **Air France**—Carrier transported 25,-
000 passengers and one million kg
freight over the Atlantic in 1946. Com-
pany concentrated all its flights to 12
destinations rapidly in the past, giving
30 percent more flight room for each
passenger. Company maintains higher
ratio of both passengers and cargo. The
year and plans to add more flights.

► **All-American Airways**—Foothold cleanc-
ing its percentage increase in passenger,
mail, and express traffic 1946-47 was
greater than all scheduled domestic lines.
The 13,511 passengers carried was 115
percent over 1946. Passenger miles rose
115 percent to 21,290,000. Domestic
passenger mail increased 10,147
AAA figures for 1946 indicate Man-
chester December only.

► **American Airlines**—Mail pay was only
5.1 percent of total income in 1946.
Mail pay was \$1,877,000 and income
came to \$31.4 million. American's aver-
age annual return on \$180 million in
assets, for the five years 1946-50, is
2.25 percent. Gross revenue for 1946
exceed \$119 million, with earnings
over \$1.30 a share, the company can
earns.

► **British Overseas Airways**—BOAC says
its 1946 Constitution fleet has averaged
6 hr. 2 min. daily utilization for 48
days, leading the grouping July 12-
Aug. 15, 1946, six days offhand the first
12 months of service was 5 hr. 49
minutes per day, or saving and savings,

1946—now Convair on trans-Atlantic
service averaged for six months 8 hrs.,
25 min. The Convair went to London
South America route via the Caribbean
in 1946 when Stratocruisers were
put on the North Atlantic.

► **Canadian Transport Dept.**—Devel-
opment has granted \$150,000 as subsidy
to the Royal Canadian Flying Club
for training private pilots in 1951.

► **Mid-Continent Airlines**—Company's
unaudited financial report shows net
profit for 1946 of \$142,685, up \$42
from a common share. This compares
with net profit \$148,024, or \$47 a com-
mon share, in 1945. Operating revenues
of \$8,268,391 are up 10 percent
over 1945. Passenger miles, 156,495,-
170, compare with 149,610,167,232.
Operating expenses are up 8 percent
to \$7,563,948, partly because of Con-
tinental service started the last seven months
of the year, and the new Sioux City,
Chicago-Milwaukee service started Sept.
23.

► **Pacific Northern Airlines**—Miles
had passenger miles gained 19 percent
to 18,136,021 in 1946, with number of
passengers up 24 percent to 1,838,112.
Cargo ton miles gained 75 percent to
391,173. Load factor, or revenue ton
miles used, was 55 percent in 1946, 41
percent in 1945.

► **Pan American World Airways**—Com-
pany is negotiating supply contracts
or commitments in aid the Defense
Dept. in establishing and operating
possible future transmission and trans-
Asia routes. PanAm bolts and ap-
pointed the vital military North Africa
and other routes in World War II.

Carrier has added a third weekly

roundtrip flight San Juan Port of Spain,
Trinidad, to heavy winter tourist industry.

► **Pioneer Air Lines**—Pioneer's 1946 pas-
senger miles gained 51 percent to 17,
727,797 in 1946. Pioneer's 99,153
air and sea miles in 1946 was 15 percent
of all lesser air mileage, while the
less and pay amounted to our about
8 percent of feeder card pay.

► **Trans-Canada Air Lines**—Company
plans to start four flights a week from
Montreal to London on April 1. TCA
will use DC-4M planes in conjunction
with Air France's Constellations. TCA
trip will take 15 hours.

► **Titan World Airlines**—Carrier claims
it has flown more passengers from the
U. S. to continental Western Europe
since 1946 than any other airline. Total
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services per week.

► **United Air Lines**—United has ex-
panded 10,000 crossings between Cali-
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port Convair flights started in 1942.
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line flights for passengers using United
and 15 international air carriers.

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extension to its maintenance and over-

haul base at San Francisco. Present
base represents a \$7 million investment.

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Honolulu for every two out of 14 to
Asia, Australia, and Oceania, through
the Orient. CAL maintains
shuttle. Company's major account
for damage to aircraft is maintained at
the equivalent of two DC-6s and one
Stratocruiser.

► **West Coast Airlines**—Com-
pany carried 46,810 passengers in 1946,
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STRICTLY PERSONAL

EDWARD TO EARTH DISLOCATIONS—One Edward Van Pelt reports that CAA's Aircraft Analysis Report No. 15 lists among the seven causes of aircraft accidents during the past year the most common one, "misuse with ground." "The Van Pelt's chart keeps appearing," *The Delta Digest*, Aircraft Meeting Digest of Surface Contractors Corp., and the Memphis Service magazine, are the latest publications to report parts of his gloomy list of aviation terms, usually copied in full in the column.

ORIGINAL BY LOCATION—We like Eddie Van Pelt's piece in the new United Aircraft *Aviation*. "Straightforward, a downer, it is the most complete airplane accident statistics ever compiled and indicates that any pilot should learn," it writes from down Chateau Voight way.

"There was the same number of people killed as in the previous category," *Flight Int'l* notes. "The most significant point made by Van Pelt is that he studied the wreckage for a total. Study this statistic, he was measuring the height of her lot."

"Now a legend at Chateau Voight will be the applicant who took his blank, house for the shrub, and later invented the telephone cords at Chateau Voight. Since when is it any place?" she demanded of the interviewee. Does this mean I phone you or vice phone me?"

"A number of hospitals have described this as a lesson, their complexion light and their smile dark."

"Those may be perplexed when it comes to posting these mortal status on paper. One woman checked off all the alternatives, replacing in the interviewee, 'The love angle and I've been married.' The love responded and divorced, and now I've a widow."

"One was listed as dependents," she recalls. "Another, originally from Canada, worked himself in from just outside Chateau Voight, and now I've a widow."

"Voight anticipates 1970 will provide over where in apply for a high certificate for the employee who leaves his place of birth as 'parents' and are holding stakes at the airport gates of a McDonald man who left under language Spoken British English," PROGRESSIVE?

"Voight says little satisfaction from a man who survived."

"A Car Mate listed under 'Deaths in Service,' 'Cards from Memphis, Tenn., to Hot Springs, Ark.,' and two auto sales manager wrote under 'Death at Service,' 'Safety' And under 'Financial Military Death,' 'Wifeless.'

"McDonald's most poignant message came from an application form was painstakingly filled out on the last words on the line made out to a second party. 'This is not me. It is not my brother in law. I don't know what he can do. All I have been told is it is not deep.'"

ANOTHER TFCO—The other night during the Aviation Writers Assn. Washington luncheon at the Sheraton Hotel, General Curtis was asked what he got for a tax. "Somebody had whirled in one of the Federal motor coaches from a front of another private dining room. It read 'National Association of Funeral Directors.'

HOW TO BE AN AVIATION WRITER—Boston Traveler's Bob Stobie, upon reading that ASA plans to produce a handbook to help young writers learn, says: "As a writer, I think we have a responsibility [to] tell the story [of] (1) The way we're written. (2) How through our work, we'll help the world [to] live better [and] longer. (3) Never let me explain, 'Right article.' It will come out 'Right attitude' [as] we're sharing. (4) Never write a press release. It will expose 'jolt factor' [not as] the main shooting clause. (5) Millions of people don't know it; after all these years, isn't it great? (6) Any 'As You Please' may do. Don't use 'As You Please' when you mean 'As Please' please. (7) And if you can write 'Official Air Force Head' without leaving it read 'Mishap,' you're in."

INTELLIGENCE REPORT FROM WASHINGTON—Intelligence bureau sources in Washington are reporting the slogan in a recent speech by Charles D. Gary, secretary of the Air Conditioning Contractors' "In Washington a contractor has been defined as a source breeding to set fire."

RAPPED ON THE LEECH—Gene Herold the New York Island city wren says Long Island Engine drivers that he heard Ralle the Stoermer tell a friend: "The Long Island Rail Road isn't selling tickets anymore. They're selling chancery."

DELAYED WEATHER FORECAST—Wiley Rogers, Director of Entries went to several news outlets that want over the New Orleans area. It's a little late to request one day or two before going to work. TO 105, ALL STATIONS, SANTA CLAUS REPORTS HEAVY ALCOHOLIC IMAGE OVER ALL STATIONS. FORECAST HI SCATTERED WHISKEY BOTTLES LOWTER BROKEN BEER BOTTLES WITH OCNL ECONOMY MOISTENED BY MODERATE TO STRONG SCOTCH AND WHISKY. 1057 B St., NW, Washington 7, D. C., is free to subscribers of the daily bell information service.

WHAT'S NEW

New Books

A presentation of *Just's All the World's Aircraft* has become an annual event that is looked forward to in the industry, and this 61st volume, the 1950-51 edition, edited by Leonard Bridgman, maintains the tradition of being the most comprehensive and best-illustrated aircraft yearbook available.

The new volume is again set in the traditional four-section format, but 1950 and 1951 contain new features, among them a listing of first flights of 35 new aircraft between June 1, 1949 and May 31, 1950. Of these, 15 were powered by jet, turboprop, propjet, reflecting increased interest in lighter-than-air development, the airship section is carried again after a ten year lapse.

The United States again leads in coverage in Section G (aircraft) with 95 pages and 222 pictures. Britain is second, with 54 pages and 119 photos. There are many new short-view drawings.

Published by McGraw-Hill Book Co., Inc., 190 W. 42 St., New York 15. Over 400 pages and 3000 illustrations, price \$7.50.

Bid Information

A directory of U. S. government contractors and subcontractors for the period July 15 to Nov. 15, 1950, has been published in Washington by U. S. Bid Information, a private company supplying a bid information service to subcontractors. The directory lists more than 10,000 companies, holding more than 6,000 contracts for military needs, valued at more than \$1.5 billion.

During the period covered, General Motors Corp. led all other companies in dollar value of contracts with 49 assignments totaling \$118 million. Bell Helicopter Aviation Corp. was second with 18 contracts valued at \$97.9 million, while Boeing Aviation Corp. had the largest number of contracts, 117, totaling more than \$42 million.

The new publication lists contracting-winning companies in alphabetical order. It takes its lists from the contracts transacted through the Office of Small Business, Department of Commerce. It is planned to have a new supplement every three months, and a complete new edition every year. Available for \$1.50 from U. S. Bid Information, 5557 B St., NW, Washington 7, D. C., is free to subscribers of the daily bell information service.

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EDITORIAL

Is Patriotism for Kids?

The United Auto Workers of GM were about to enter their ninth week striking against Packard Aircraft division in those words were written.

"We hope the strikers' home town newspaper in Flagstaff, Md., has been publishing those war pictures we have seen of the Panhard C-119 cargo plane at work in Korea. That would be just the right kind of thing to do."

On behalf of union leaders determined to march on we saw in the case of the Brotherhood of Railway Train men's shameful strike—that old-fashioned Americanism is now held to be come stiff in this enlightened atomic age?

It is about now the United States Air Force or some other branch of the national government enters this ridiculous picture and tells the Packard strikers to go back to work while the negotiators to both labor and management try to work things out.

After Senator Taft's startling election victory in Ohio the Administration in Washington should as quickly have any thoughts first in dealing with the strike, made those between the various units of creating a new Red Americana way will when they think it stand and a lot of them are renouncing Communists. Where is the country going to rebel against union leadership that puts strikers against the majority?

A Public Servant First

The debt act of "living low" in Washington sometimes seems to be cited a more and more reason than it is at the Orient. Federal office holders frequently pridy it in serving the public conservatively and honestly.

In Washington, many a new or worthwhile idea is rejected or passed over because it is thought to bring up a question. It does up a mistake in the same way. Every newsman who has worked long in the national capital has seen so many examples of that type of public wisdom that he sometimes fears for a clear-cut example of forthrightness or willingness to fight a wrong even at the expense of "face."

Last week's newspapers appeared with a move by AF Secretary Fletcher that was at regard of his longest.

The Continental Air Command at Mitchel Field had responded that Capt. Charles A. Hill Jr. a colonel, Air Force service officer, resigns his commission or seek a hearing on his disciplinary charges. The Daily Worker, the U.S. Communist daily newspaper, and other elements reviled him bitterly and noted of having been involved in the past with groups of questionable loyalty. The resignation letter is Capt. Hill's was signed by Col. R. W. Holl, Assistant Director of the Air Command's intelligence personnel, Hill told the N.Y. Times.

The answer had been demanded three times for publication in World War II.

Secretary Fletcher took over the case personally and in a matter of hours quashed the charges, ordered the investigation dropped, passed Capt. Hill's continuing pay and expanded right publicly that charges had been lodged against him.

After all, in such cases you have a rare opportunity for the dignity of one leading defense department after a civilian hold master of such endowed military veterans. And you appreciate the kind of conscientious and able public servant who will accept a vital inspection officer in their days and dare to reverse one of his own officers and sacrifice "face" to justice and country.

Another Investigation

A lengthy investigation is being made of the source of Arkansas' Wren's story Jan. 23 on a year-old proposal by the Douglas company for a long-range telephone switch long range bomber.

This information comes from the Associated Press in a story printed in newspapers Feb. 4. The story and sources quoted in the Associated Press stories were never confirmed by Los Angeles newspaper. According to the AP, the USAF Inspector General is looking into the matter at least with any apparent violations of security.

If the Inspector General finds no wrongdoing in us we shall be glad to let less easily lose a sheet of a Douglas-printed brochure fall into our hands. The tale will remind us of the story recently about the Washington newspaper who pulled up on the street a sheet of waste paper from NACA and found the contents worthy of printing.

Why Did Truman Say It?

What did President Truman mean in his address Dec. 15 when he referred to increasing aircraft production five-fold within the coming year?

The aircraft industry still doubts the statistic. Some here and outside observers like United Aircraft's President Jack Horner simply and such a jump part not in the cards. Another group allied themselves with the "we can do it" school, and a third, more cautious opinion was, "We can do it but only under perfect conditions," which means in this day and age that they can't do it!

We are finding, too, that even in the industry there is growing confusion as to what the President really meant. This is what we said:

"With this year we will be raising jet planes at the present rate of production."

SENATOR WEINER sent me writer to both the Pentagon and the White House to learn whether the President meant to say what he did say.

High Air Force people answered as like this: "The Production rates are classified. Even if we were in a position to comment we would still be in position to mislead the President's message, of course—classified it."

Our efforts in the White House went up with a message from one of the President's inner-circle of speech writers.

"That's ridiculous, no classified info is used in speeches."

"The President's message is classified," continued our source, "and others are classified by the Air Force and by Secretary Marshall himself, as well as others. So far as the White House is concerned, the statement about a five-fold increase in production is clear and concise and states what it said. How does the double line what Defense Department plans to have on the books by the end of 1953?"

Obviously, then, the President meant what he said. The wording was not a typographical error. But it means obvious to us that the spokesman himself even did not realize that the "double" was those who contend that the production rate cannot be increased in 12 months to five times the present rate, no matter how many orders might be on the books by the end of 1953.

After all, in this case the President's administrative goal but no do so close with man the Harry who has been given right before. Nevertheless along the line the President was poorly advised. This we put on the stand and below the Administration stats showing the industry with breakneck next December. —Robert H. Wood



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RADIO - CANNY ARINC EMPLOYS COLLINS EQUIPMENT ON THE GROUND



Collins 221-B high frequency radio receiver. A very simple dependable unit for selecting suitable frequencies for frequency shift operation.



Collins 220-E high frequency telephone receiver.

"Candy" means careful in eliminating an allegation involving shoddy. Aeromaritime Radio Incorporated will do that, particularly when it comes to radio communications for the airline.

So it is significant that ARINC chose Collins equipment for the transoceanic first page for its Pacific and Caribbean networks.

The Pacific net includes ground-based facilities at Los Angeles, San Francisco, Seattle, Anchorage, Sitka, Honolulu, Okinawa and Tokyo. The net serves Pan American, Northwest, United, British Overseas, Trans Pacific, Philippine, Chinese National and All Japan.

The Caribbean net is based at Houston, New Orleans, Miami, Mexico City, Havana and San Juan. Its facilities are used by Pan American, AAL de Mexico, Eastern, Braniff, Chicago and Southern, ALM, British Overseas, KLM, Avianca and Panair.

In both areas ARINC maintains large operations concerned with weather services, enroute communications and operational dispatches. Collins equipment is used for point-to-point phone, CW and telephone transmission and reception, and ground-to-air voice communications.

Write us about your requirements in ground-based radio communications equipment.

May 21, 1952

IN RADIO COMMUNICATIONS, IT'S . . .

COLLINS RADI0 COMPANY, Cedar Rapids, Iowa

15 Main Street, New York 16 3700 West Olive Avenue, Burbank





Allison Powers FIRST FLIGHT of First Turbo-Prop Transport

THE first U.S. turbine transport is now a reality and is under test. It was made possible through the private enterprise and initiative of the Allison Division of General Motors. First flight was completed December 29, 1950 with an Allison-owned Convair Turb-Liner equipped with two Allison "501" Turbo-Prop engines.

This investment in the future of Turbo-Prop power is the result of Allison determination to speed the development of turbine transports in this country. The Allison "501" Turbo-Prop engines, developed under sponsorship of the U.S. Navy, are the most advanced Turbo-Prop engines in the U.S. today. They lead the world in high power for their low weight. They will make possible smoother, more economical transports to carry increased loads of passengers and freight.

Allison will prove these advantages in an extended flight test program on the Turb-Liner. The results—to be made available to the military services, aircraft manufacturers and commercial air lines—will prove the safe and dependable operation of Turbo-Prop power.

Thus the United States will continue its world leadership in transport aircraft.



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